PRELIMINARY ASSESSMENT

ARVIN INDUSTRIES, INC. SITE

U.S. EPA ID: IND062812870

INDIANAPOLIS, INDIANA

MARION COUNTY

MARCH 15, 1993

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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SITE INVESTIGATION SECTION

ARVIN INDUSTRIES, INC. SITE

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SITE NARRATIVE

INTRODUCTION

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), the Site Investigation Section of the Indiana Department of Environmental Management (IDEM) conducted a Preliminary Assessment (PA) of the Arvin Industries, Inc. site in Indianapolis, Indiana, Marion County.

The purpose of this investigation was to collect information concerning conditions at the Arvin Industries site sufficient to assess the threat posed to human health and the environment and to determine the need for additional CERCLA/SARA or other appropriate action. The scope of the investigation included a review of available file information, a comprehensive target survey, and an on/off-site reconnaissance.

SITE DESCRIPTION, OPERATIONAL HISTORY, AND WASTE CHARACTERISTICS

SITE DESCRIPTION

The site, formerly known as Arvin Automotive Industries, lies in an industrial area of Marion County and is located at the northeast corner of Interstate 70 and the Airport Expressway in Indianapolis, Indiana. The site is located in Township 15 North, Range 3 East, Section 18 SE ¼, SE ¼, and Section 19 NE ¼, NE ¼. The facility can also be found at 39° 44′ 06" latitude and 86° 14′ 13.45" longitude. Refer to the Site Location Map (Figure 1) on the following page.

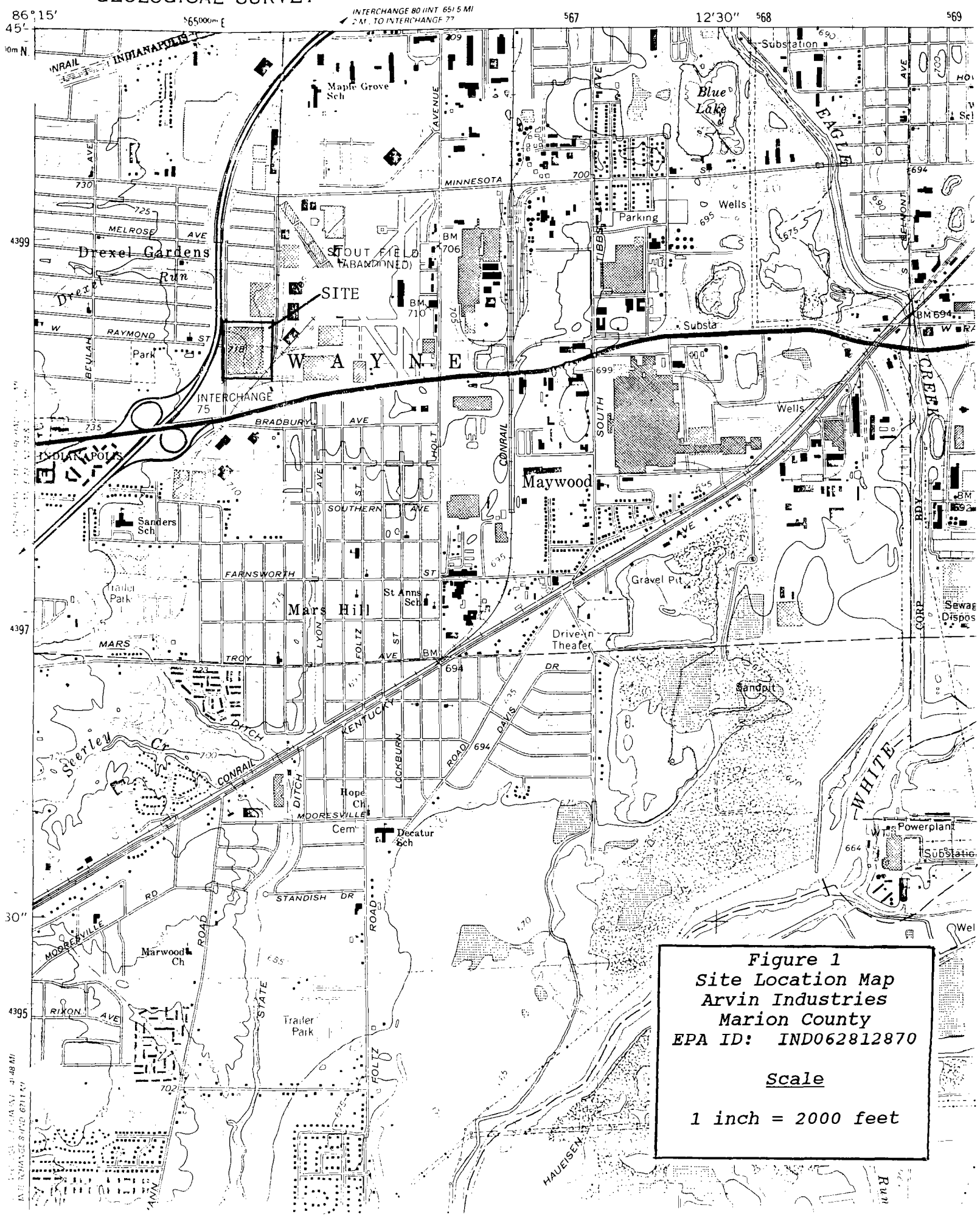

Figure 1
Site Location Map
Arvin Industries
Marion County
EPA ID: IND062812870

Scale

1 inch = 2000 feet

supervision of Arvin Industries personnel. It was reported that at least one of these tanks was 15 years old at the time of removal. These two USTs contained blended solvents of primarily mineral spirits, toluene and xylene type products.

The 18,000 gallon UST contained raw chemical product for use in the facility and the 500 gallon UST contained waste chemicals resulting from operations in the processing area.

Upon complete removal of the USTs, the tanks were reportedly visually inspected on-site by Arvin representatives who determined that the structural integrity of the tanks was satisfactory. The soils were replaced and used as backfill. The removed tanks were then cut open to allow final cleaning and removal of remaining residues. Following this, the tanks were completely destroyed by being cut-up in smaller sections. The individual tank pieces were then collected and taken off-site as scrap metal.

As part of the Phase II report, soil borings samples along with groundwater samples from groundwater monitoring wells (installed by ATEC during the Phase II investigation) were obtained. Sample results indicated elevated levels of 1,1,1-Trichloroethane and tetrachloroethane in the soils. Groundwater samples revealed 1,1-Dichloroethane (49 ppb) and 1,1,1-Trichloroethane.

According to a letter by Mr. Gifford, dated December 21, 1992, the contents of the two UST's at the northwest corner of the building consisted almost exclusively of mineral spirits (with perhaps traces of toluene and xylene) and that trichloroethane was not used in the operation of the facility.

In December 1988, the facility was sold to Indianapolis Industrial Development #1, Inc. An on-site visit conducted on January 15, 1993, revealed that the north half of the facility is now being leased to the Tractor Supply Company (TSC). TSC, a farm equipment and supply company, is leasing the former plant building. TSC is using the building as a retail distribution center. The only known substance TSC is currently utilizing is a degreasing soap (HD5770) used to clean the plant floor. Spent hydraulic fluid from the forklifts used in the Warehouse is being disposed of by Material Handling Exchange, 1411 Century Club Road, in Indianapolis, Indiana.

The east half of the plant building is currently being leased by the State of Indiana and is being used as its form department.

GROUNDWATER PATHWAY

HYDRAULIC SETTING

The Urban land-Miami Complex makes up the majority of surface soils on site. Run off is generally rapid. Permeability of the soils range from .6-2.0 inches/hour and the pH is from 5.6 to 7.3. The Urban land-Crosby Complex encompasses the west to southwestern sector of the site property. This soil has virtually the same characteristics as the Urban land -Miami Complex.

The unconsolidated material above the bedrock may be described as a sequence of coarse sand and gravel with beds of gravely silt. The intervals described as gravel with silt or clay may, in fact, be the tills typical of Wisconsin (and possibly Illinoisan) glacial stratigraphy observed elsewhere in Marion County. Many of the

regional till sheets are tight gravel and clay mixtures. Since the ground surface topography is essentially flat, the thickness of these glacial deposits is controlled by the shape of the bedrock surface. The sand and gravel deposits discussed above are primarily the type of aquifers being used as sources of drinking water found in private and municipal wells.

The bedrock in the vicinity of the site is the New Albany Shale. This shale, lies directly beneath the glacial deposits. This shale is Devonian in age.

Due to the extremely low permeability characteristics associated with this shale, a water bearing reservoir in this rock type in unlikely. The underlying Devonian and Silurian carbonate rock are other sources of drinking water, however, the quality of the water is undetermined at this time.

GROUNDWATER TARGETS

Residents within a 4-mile radius rely on a municipal water supply system and water obtained from private residential wells. The nearest municipal well field is located approximately 3½ miles to the north in Speedway, Indiana. This well field, located essentially upgradient to the site, services approximately 26,000 residents primarily within the town of Speedway.

The 26,000 people are located outside the 4-mile radius of the site. The municipal well fields which supply water to residents within the 4-mile radius, are located outside the 4-mile radius of the Arvin Industries site.

Non Responsive

GROUNDWATER CONCLUSIONS

A release of hazardous substances from the Arvin Industries site into a shallow aquifer is suspected. A Subsurface Investigation and Sampling Results report conducted by ATEC Environmental at the site noted elevated levels of 1,1-Dichloroethane (49 ppb) and 1,1,1-Trichloroethane (1500 ppb) within shallow aquifer at a depth of around 17 feet. The report indicated that groundwater flow may be in an easterly direction. Due to the fact that 1) a potential exists for the detected volatile organic compounds (VOC) to migrate into the underlying aquifers used for drinking water and 2) numerous residential private wells lie close to the former Arvin Industries site, a potential for migration of contaminants into aquifer used for drinking water is suspected. As mentioned earlier, Mr. Page, an Arvin Industries representative, stated in a letter the VOCs detected on-site were not used in their manufacturing process. Therefore, it should be determined if a release of contaminants can be attributed to the former Arvin Industries site.

SURFACE WATER PATHWAY

HYDROLOGIC SETTING

Overland drainage from the majority of the site appears to flow in a southerly direction into an intermittent stream named State Ditch. Drainage along the west perimeter is controlled by a diversion ditch which allows surface runoff to flow north. It appears that drainage from the north trending ditch eventually

discharges into State Ditch. Drainage from State Ditch flows directly into the White River at a point located approximately 2½ miles south of the site.

SURFACE WATER TARGETS

There are no surface water intakes located within 15 downstream miles of the site. Most residents are served by the municipal water company. Residents not served by the municipal system obtain drinking water from individual private wells.

White River is used for recreational fishing. Aquatic species commonly caught may include, bass, catfish, and various pan fish.

There are numerous sensitive environments within 15 downstream miles of the site. Below in table form is a list of the sensitive species/features and the status of each.

Species/Feature	Status
Clonophis kirtlandii	Federal Candidate Snake
Flood Plain Forest	Natural Community
Epioblasma torulosa rangiana	State Endangered Mussel Federal Candidate Mussel
Pleurobema clava	State Endangered Mussel Federal Candidate Mussel
Quadrula cylindrica cylindrica	State Endangered Mussel

SURFACE WATER CONCLUSIONS

There are no indications of a release of contaminants to surface water nor are any releases suspected. Contaminants on site were detected in deep subsurface soils (≈12 feet) and in the shallow groundwater. There does not appear to be a groundwater to

surface water pathway which could allow contaminants to be discharged into State Ditch or the White River. It appears that any potential contamination is confined to the subsurface.

SOIL EXPOSURE AND AIR PATHWAY

PHYSICAL CONDITIONS

As addressed in the site description of this narrative, a plant building covers approximately 12 acres. Parking lots encompassing approximately 4 acres surround the north, east, and south sectors of the plant building. The west perimeter of the site is grass covered. The entire site is fenced.

SOIL AND AIR TARGETS

There are no residents on site. The nearest resident is 500 feet to the west and the nearest school is Sanders School located 3000 feet to the southwest. The total population within a 4-mile radius is approximately 120,000. The population was determined by assuming 15% of the population of Indianapolis.

There is also the possibility that terrestrial sensitive environments of the State endangered bird, Bartramia bugicanda, may inhabit an area along the White River, one mile south of the site.

SOIL EXPOSURE AND AIR PATHWAY CONCLUSIONS

The soil exposure pathway appears to pose a minimal threat at the Arvin Industries site. According to a sample analysis report

by ATEC, it appears that any contamination on site is confined to the subsurface ≥ 12 feet. In addition, access to the site is limited. A fence surround the entire site.

SUMMARY AND CONCLUSIONS

The Arvin Industries site operated from 1974 to 1988.

A release of hazardous substances from the Arvin Industries site into a shallow aquifer is suspected. A substance Investigation and Sampling Results report conducted by ATEC Environmental at the site noted elevated levels of 1,1-Dichloroethane (49 ppb) and 1,1,1-Trichloroethane (1500 ppb) within a shallow aquifer at a depth of around 17 feet.

There are no indications of a release of contaminants to surface water nor are any releases suspected. It appears that any potential on-site contaminants are confined specifically to the subsurface.

Due to the fact that 1) the former plant building covers approximately 12 acres, 2) a paved parking lot covers the north, east and southern sectors of the property, and 3) due to the good cover of vegetation along the west perimeter of the site, the likelihood of human exposure to contaminated soil is probably minimal. No release to the air is suspected due to the paved areas and heavily vegetative cover and the lack of any odors or blowing particulates during the site reconnaissance.

The site encompasses approximately 15 acres, of which approximately 4 acres, located on the north, east, and south sectors of the site, are designated parking lot/storage areas. The plant building covers approximately 12 acres and consists of about 4,000 sq. ft. of office space and 484,000 sq. ft. of warehouse space. Except for certain areas, the majority of the parking lot areas are paved and appears to have been maintained. The west sector of the facility is grass covered. A north draining diversion ditch along with a billboard are also situated on the western portion of the site. Groundwater monitoring wells are present along the west and north sectors of the site. No evidence of previous underground storage tank excavation activity was observed.

OPERATIONAL HISTORY AND WASTE CHARACTERISTICS

The facility operated from 1974 to 1988. In a telephone conversation with Mr. Page Gifford on March 10, 1993, legal representative for Arvin Industries, the property was purchased with an industrial revenue bond in 1974. Mr. Gifford was unaware of any manufacturing occurring at the facility and was under the impression that the plant building was used principally as a warehouse. However, according to a Phase II report (Subsurface Investigation and Sampling Result for the Arvin Industries site) by ATEC Environmental, the northwest corner of the plant building was used as a processing area for creating and/or finishing automotive mufflers.

On March 12, 1993, Mr. Gifford stated that after further inquiries into the former operations at the site, it is believed that tail pipe and muffler pipe assembling work was performed in the processing area. The exhaust products went through a wash and clean operation in order to remove oil film. A baked on rust inhibitor was applied to some products. An automatic sprayer was used to paint glasspacks. In a letter dated December 21, 1992, stated that trichloroethane was not used in the operation of the facility.

As a result of the Phase II report, several areas of environmental concern were identified for further investigation. These are as follows:

- The underground storage tanks (USTs) formerly located near the north side of the buildings.
- The septic tank system formerly located near the northwest corner of the building.
- Suspected asbestos-containing ceiling tile inside the building.

A site map showing the plant buildings, UST areas, and other site features can be found on Figure 2.

The report verified records that two underground storage tanks (USTs) were at one time located on the north side of the property. Piping used during the service life of the tanks were noted at the location of the removed USTs. In April of 1986, one 18,000 gallon UST and one 500 gallon UST were reportedly removed under the

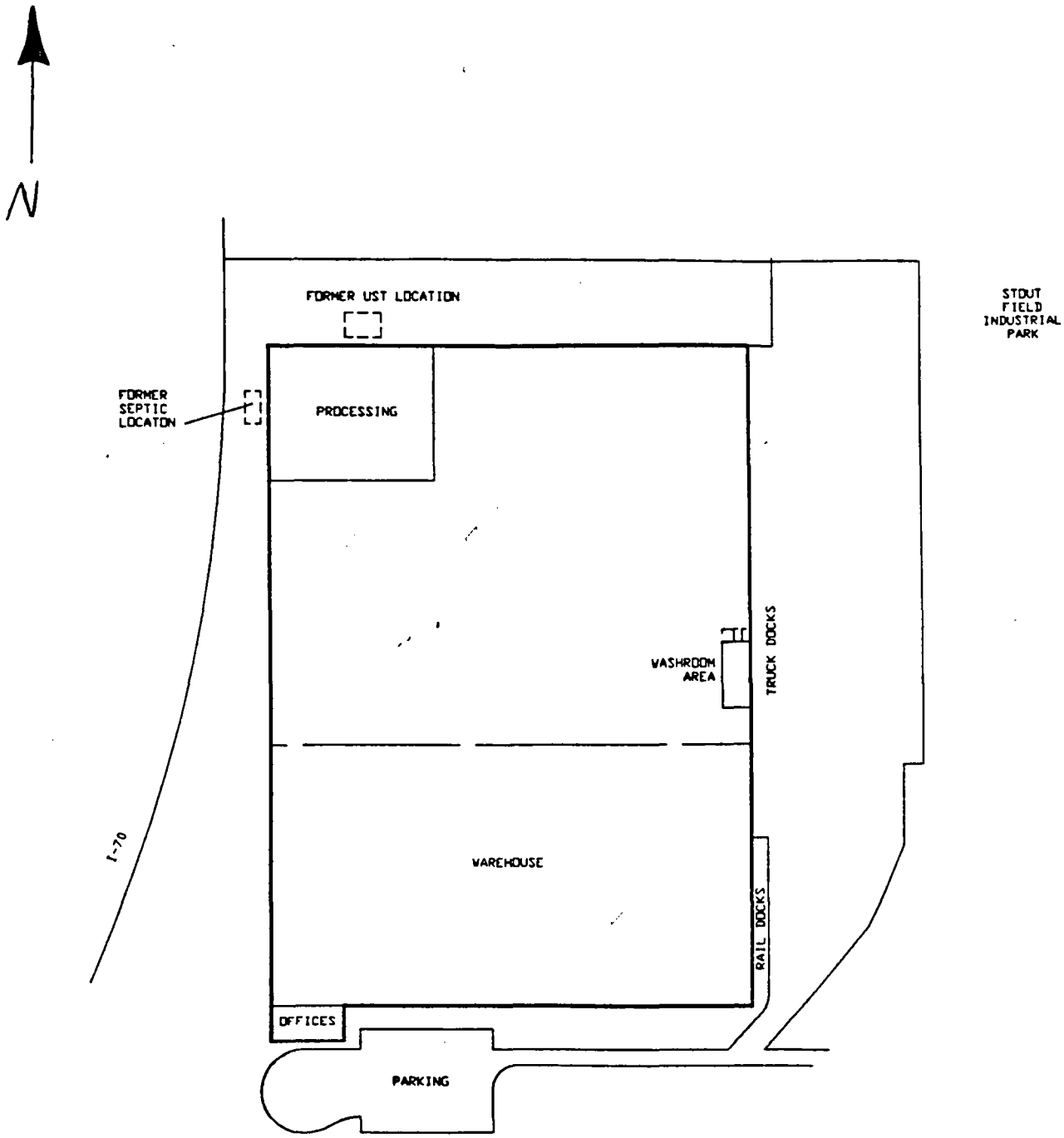

Figure 2
Site Features Map
Arvin Industries
Marion County
EPA ID: IND062812870

Scale

1 inch = 200 feet

REFERENCE LIST

1. ATEC ENVIRONMENTAL CONSULTANTS,SUBSURFACE INVESTIGATION AND SAMPLING RESULTS FOR ARVIN INDUSTRIES; ATEC PROJECT NUMBER 21-97509; 9-28-92

2. INDIANA GEOLOGICAL SURVEY, CAVES OF INDIANA, RICHARD L. POWELL, CIRCULAR NO. 8; 1961

3. INDIANA DEPARTMENT OF NATURAL RESOURCES/DIVISION OF WATER,DRILLER WELL LOGS

4. U.S.G.S. TOPOGRAPHIC MAP, MAYWOOD QUADRANGLE,1986; CLERMONT QUADRANGLE 1984; INDIANAPOLIS WEST QUADRANGLE, 1980; MAYWOOD QUADRANGLE,1986.

5. REFER TO ATTACHMENT A

6. U.S. DEPARTMENT OF COMMERCE, BUREAU OF THE CENSUS, 1990 CENSUS OF POPULATION AND HOUSING, SUMMARY POPULATION AND HOUSING CHARACTERISTICS OF INDIANA

7. TELEPHONE CONVERSATION WITH JIM HARRIS, INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT/DRINKING WATER BRANCH; 2-17-93

8. TELEPHONE CONVERSATION WITH MIKE LITTLEJOHN, SPEEDWAY WATER COMPANY; 2-10-93

9. SOIL SURVEY OF MARION COUNTY, U.S. DEPARTMENT OF AGRICULTURE; 1978

10. INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT/DRINKING WATER BRANCH ARNIE VIER; 2-10-93

11. U.S.G.S. TOPOGRAPHIC MAP,MAYWOOD QUADRANGLE; 1986

12. U.S.G.S. WATER RESOURCES DATA, INDIANA; WATER YEAR 1991; U.S. GEOLOGICAL SURVEY WATER DATA REPORT IN-91-1

13. INDIANA DEPARTMENT OF NATURAL RESOURCES/DIVISION OF NATURE PRESERVES-HERITAGE PROGRAM; MR. CLOYCE HEDGE, SENSITIVE ENVIRONMENT REQUEST

14. IINDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, ON-SITE VISIT WITH M. JAWORSKI, B. GILES, AND J. NADDY; 1-15-93

1. PERSONAL CONVERSATION WITH LLOYD PAXTON, MANAGER OF THE TRACTOR SUPPLY COMPANY WAREHOUSE, 1-15-93

16. REFER TO ATTACHMENT B

ARVIN

ARVIN INDUSTRIES, INC., One Noblitt Plaza, Box 3000, Columbus, IN 47202-3000 (812) 379-3000

Legal Department

21 December 1992

Mr. Mark Jaworski
Site Investigation Section
Indiana Department of
Environmental Management
105 S. Meridian St.
Indianapolis IN 46225

Re: 4430 Airport Expressway

Dear Mr. Jaworski:

Pursuant to your request, please find enclosed a copy of the report of the Phase II investigation which ATEC conducted on Arvin's behalf at the above-captioned location in September of 1989.

As is reflected in the report, I have additionally confirmed both that the contents of the two UST's at the northwest corner of the building consisted almost exclusively of mineral spirits (with perhaps traces of tolulene and xylene) and that trichlorethane was not used in the operation of the facility.

As regards the one "hot spot" for TCE reflected by the MW-2 sample, I note that the contour map (Fig. 4) shows that the groundwater flow is West-to-East, making MW-2 upgradient from MW-3. This is at least indicative that the source of the trichlorethane in the groundwater was off-site, an inference further supported by the fact that I am advised that this contaminant was not employed at the facility.

I trust this is responsive to your inquiry.

Sincerely,

Page E. Gifford
Counsel

PEG/ego

encl.

SUBSURFACE INVESTIGATION
AND SAMPLING RESULTS
ARVIN INDUSTRIES SITE
4430 AIRPORT EXPRESSWAY
INDIANAPOLIS, INDIANA
ATEC PROJECT NUMBER 21-97509

Prepared For:

MR. GARY ADMIRE
DIRECTOR OF FINANCIAL SERVICES
ARVIN INDUSTRIES, INC.
1531 13th STREET
COLUMBUS, IN 47201

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Solid & Hazardous Waste Site Assessments
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Hydrogeologic Investigations & Monitoring
Analytical Testing / Chemistry
Industrial Hygiene / Hazard Communication
Environmental Audits & Permitting
Exploratory Drilling & Monitoring Wells

September 29, 1989

Mr. Gary Admire
Director of Financial Services
Arvin Industries, Inc.
1531 13th Street
Columbus, IN 47201

Re: Subsurface Investigation and Sampling Results
Arvin Industries Site
4430 Airport Expressway
Indianapolis, Indiana
ATEC Project Number 21-97509

Dear Mr. Admire:

ATEC Environmental Consultants (ATEC) has completed the subsurface investigation and sampling project at the above-referenced site. The purpose of this project was to investigate areas of potential environmental concern outlined in our January, 1988 environmental site assessment (ATEC Project Number 21-87001).

The following report includes a description of the work performed, our findings and conclusions and recommendations.

Should you have any questions or comments regarding this report, please do not hesitate to contact either of the undersigned.

Very truly yours,

ATEC Associates, Inc.

Lawrence E. Kahrs
Project Engineering Geologist

Gregory B. Byer, P.E.
Project Hydrogeological Engineer

LEK/ca
cc: Mr. Rick Suja, Coldwell Banker Commercial

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SUBSURFACE INVESTIGATION AND SAMPLING RESULTS

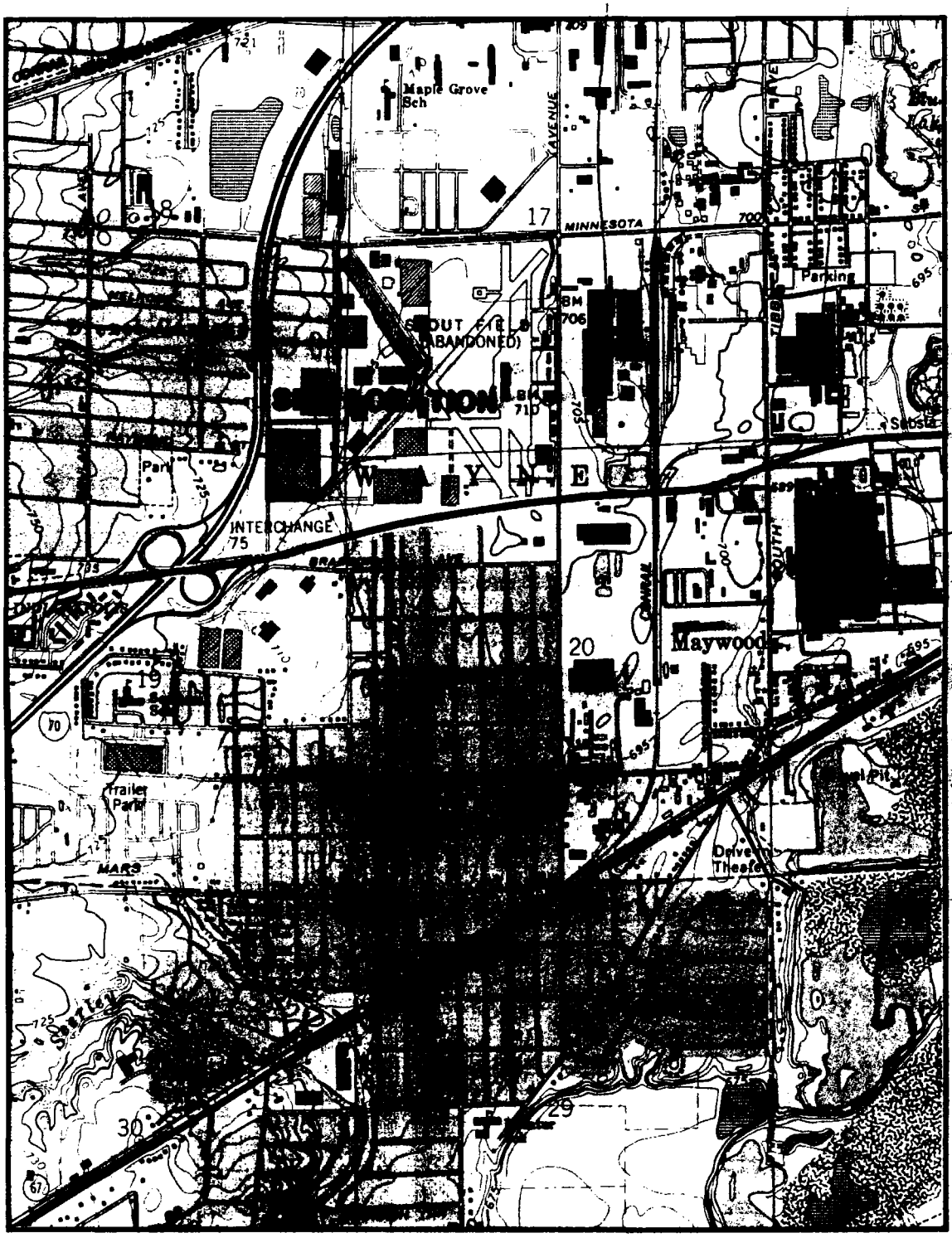
Arvin Industries Site
4430 Airport Expressway
Indianapolis, Indiana
ATEC Project Number 21-97509

1.0 INTRODUCTION

ATEC Environmental Consultants (ATEC) was retained by Arvin Industries, Inc. (Arvin) to perform a subsurface investigation and sampling project at the Arvin site located at 4430 Airport Expressway in Indianapolis, Indiana. The purpose of this project was to investigate areas of potential environmental concern which were identified in the January, 1988 environmental site assessment prepared by ATEC (ATEC Project Number 21-87001).

The study site, formerly known as Arvin Automotive Industries, is located at the northeast corner of Interstate 70 and the Airport Expressway. The location of the site relative to the surrounding area is shown on Figure 1. The building at the site consists of approximately 4,000 sq. ft of office space and 484,000 sq. ft of warehouse space. The northwest corner of the building was used as a processing area for creating and/or finishing automotive mufflers.

As a result of the environmental site assessment, several areas of environmental concern were identified for further investigation. These are as follows:



VICINITY MAP
SUBSURFACE INVESTIGATION & SAMPLING
ARVIN INDUSTRIES SITE
INDIANPOLIS, IN

PROJECT NO.	21-97509
SCALE	1" = 2000'
FIGURE NO.	1

ATEC

* The underground storage tanks (USTs) formerly located near the north side of the building.

* The septic tank system formerly located near the northwest corner of the building.

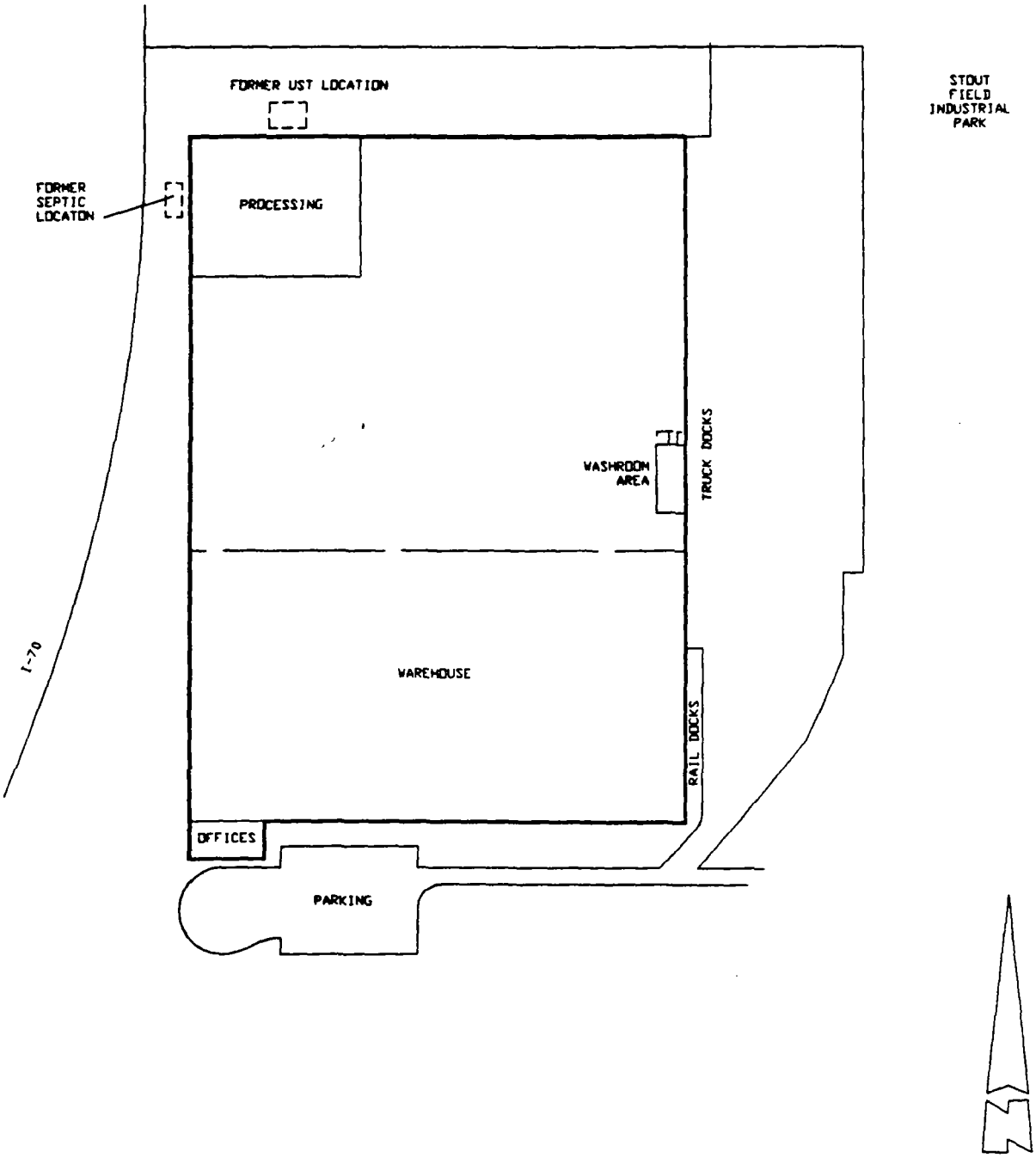
* Suspected asbestos-containing ceiling tile inside the building.

The configuration of the site and the areas of potential environmental concern are shown on Figure 2. This report describes the activities undertaken by ATEC to investigate each of these areas and describes our subsequent findings.

2.0 WORK PERFORMED

2.1 Former Underground Storage Tanks Location

The walk-through site investigation verified records that two underground storage tanks (USTs) were at one time located on the north side of the property. Piping and vent piping used during the service life of the tanks were noted at the location of the removed USTs. In April of 1986, one 18,000 gallon UST and one 500 gallon UST were reportedly removed under the supervision of Arvin Industries personnel. It was reported that at least one of these tanks was 15 years old at the time of removal. These two USTs contained blended solvents of primarily mineral spirits, toluene and xylene type products.



SITE PLAN
SUBSURFACE INVESTIGATION & SAMPLING
ARVIN INDUSTRIES SITE
INDIANPOLIS, IN

PROJECT NO.	21-97509
SCALE	1" = 200'
FIGURE NO.	2

ATEC

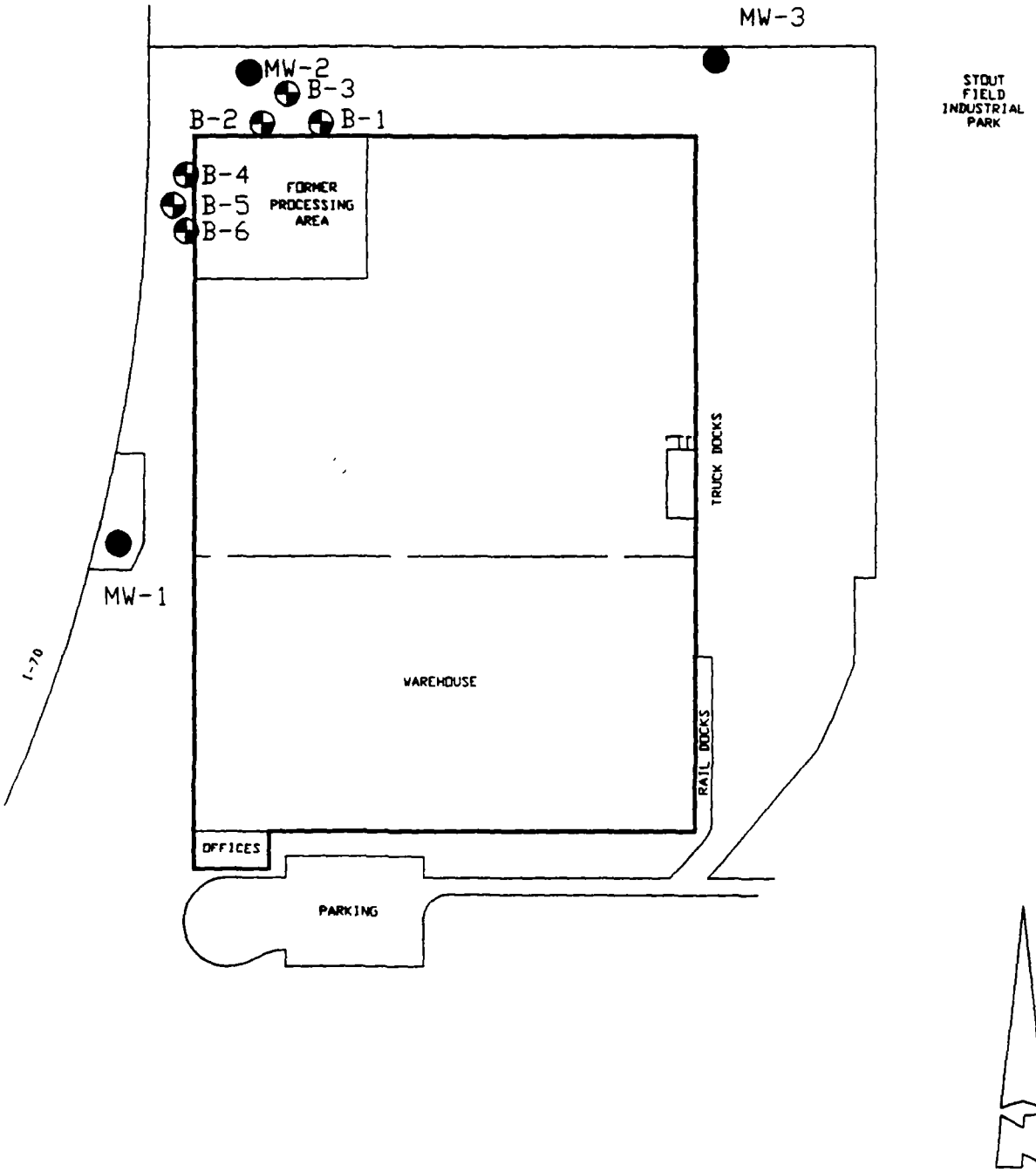
The 18,000 gallon UST contained raw chemical product for use in the facility and the 500 gallon UST contained waste chemicals resulting from operations in the processing area. Also, one small floor drain located near the center of the processing area was plumbed to the now removed 500 gallon UST.

Upon complete removal of the USTs, the tanks were reportedly visually inspected on-site by Arvin representatives who determined that the structural integrity of the tanks was satisfactory. The soils surrounding the USTs were also visually inspected and were reportedly at that time judged to be free of possible contamination. From the observations made during the UST removal, the soils were replaced and used as backfill along with extra backfill provided by the contractor. The removed tanks were then cut open to allow final cleaning and removal of remaining residues. Following this, the tanks were completely destroyed by being cut-up in smaller sections. The individual tank pieces were then collected and removed off-site as scrap metal. The tank removal reports do not indicate that any soil samples were collected and analyzed for potential contamination.

Due to the potential adverse environmental effects of the former USTs, ATEC advanced three (3) soil borings in the area of the former USTs. Each of the borings were drilled to

total depth of 12.5 ft which represented the approximate depth to groundwater in this area. All of the borings were drilled using hollow-stem auger techniques. The locations of the borings are shown in Figure 3. In order to evaluate the soil conditions of each boring location, split-spoon samples were collected at 2.5 ft intervals throughout each boring. Each soil sample was inspected visually for evidence of contamination. Logging of the soil sample consisted of describing the soil using the Unified Soil Classification System (USCS). Also recorded on the boring logs are the results of the Organic Vapor Analyzer screening performed on each soil sample. A Century Organic Vapor Analyzer (OVA) Model 128 was used for this purpose. Following extrusion of each soil sample, the OVA inlet was placed in a clean sample jar with a representative portion of the sample. The value recorded during this procedure was then recorded on the boring log. The OVA is a Flame Ionization Detector (FID) and is equipped with a small pump which draws sample vapors into a chamber. The sample vapor is then ionized by a hydrogen flame and a detector displays the degree of ionization on a dial gauge in units of parts per million (ppm). Copies of the boring logs describing the soil conditions and associated OVA readings can be found in Appendix A of this report.

The soil sample collected from the 11.0 to 12.5 ft interval at the base of each boring was submitted for analysis of



GROUNDWATER CONTOUR MAP
SUBSURFACE INVESTIGATION & SAMPLING
ARVIN INDUSTRIES SITE
INDIANPOLIS, IN

PROJECT NO.
21-97509

SCALE
1" = 200'

FIGURE NO.
3

ATEC

volatile organic compounds (VOC). This sampling interval represented the depth at which potential contamination from the former USTs may have been present.

2.2 Former Septic Tank Area

At the time Arvin Industries closed operations at this facility, the two (2) septic tanks were reportedly cleaned out, tops broken open and filled with sand. The lines leading from the drains to the septic tanks were emptied but were not plugged off. The lines to the septic tanks were serviced by floor drains and floor grates. The grated drains are composed of a small cement vault (sump) with a 3 in. diameter stand pipe or riser. The sump is designed to fill prior to draining through the pipe in order to prevent heavy slugs of waste material from entering the septic tanks in case of a spill. The septic tanks are set-up such that they function as settling tanks prior to the effluent leaving them and discharging to the sewers.

Due to the potential environmental concerns associated with the former septic area, ATEC advanced three (3) borings near this area. These borings were drilled and sampled in an identical manner to the aforementioned borings near the former UST area.

A sample was collected for analysis from the 11.0 to 12.5 ft interval in borings B-4 and B-5, and from the 13.5 to 15.0 ft interval in boring B-6. These samples were submitted for VOC analysis to ATEC Analytical Laboratories.

2.3 Groundwater Monitoring Well Installation

In order to determine if the groundwater beneath the site has been adversely affected, ATEC installed three (3) groundwater monitoring wells at the Arvin site. Since subsurface conditions had previously been determined by the borings drilled at the site, each well was installed to the desired depth without collecting soil samples.

Each well consists of 10.0 ft of 2 in. diameter 10 mil factory slotted PVC well screen installed 7.0 ft into the water table at each well location. The provision for a portion of the well screen (3.0 ft) installed above the water table allows for seasonal fluctuations in the water level beneath the site and the detection of any free-floating product which may be present. A clean sand pack was emplaced around each well screen, in addition to the natural sands which were allowed to collapse around the lower portion of the well. A bentonite seal was then installed 1.0 ft over the well screen and the remainder of the borehole grouted with a cement/bentonite grout slurry to the ground surface. A locking steel protective casing protects each well riser

from damage. Following installation, each well was developed using a clean PVC bailer and cord to reduce well turbidity and to ensure a good hydraulic connection with the surrounding aquifer.

After development, each monitoring well was sampled using a decontaminated bailer and dedicated cord. Samples from the wells were submitted to ATEC Analytical Laboratories for VOC analysis.

After the wells had been sampled, ATEC personnel returned to the site to determine the elevation of each monitoring well riser. This data, in conjunction with the measured depth to water of each location, was then used to establish the direction of groundwater flow beneath the site.

The findings of the monitoring well installation are presented in the following section of this report. Monitoring well construction diagrams for the three (3) wells can be found in Appendix A.

2.4 Asbestos

Three (3) areas of potential asbestos-containing material were identified at the site: the drop ceiling tile in the front office area, the men's washroom, and then women's washroom, all in the northern portion of the warehouse. In

order to determine if these materials contain asbestos, ATEC personnel collected representative samples from each location. The samples were then submitted to ATEC Analytical Laboratories for analysis by Polarized Light Microscopy (PLM) to determine the potential asbestos content. A material which contains 1% or more asbestos fibers is regarded as an asbestos-containing material.

3.0 FINDINGS

3.1 Subsurface Conditions

Information collected during the soil boring program indicates that the soils near the former UST and septic tank locations consist of predominantly sand with trace amounts of gravel. Some fill material consisting of brown silt and clay was observed in the upper 1.0 to 2.0 ft of material.

Similar conditions were countered in monitoring wells MW-1 and MW-2 near the northwest and western portions of the property. However, monitoring well MW-3, which was installed in the northeastern portion of the property, penetrated a gray clay at approximately 7.0 ft in depth and continued to the bottom of the borehole.

3.2 Analytical Results - Soil and Groundwater

The results of the analyses performed on the soil and groundwater samples collected from the Arvin site are summarized in Table 1.

Table 1

Summary of Analytical Results

Arvin Industries Site

Sample I.D.	Depth	Matrix	Area	Volatile Organic Compound	Concentration (ppb)
B-1	11.0 - 12.5	Soil	Former UST	1,1,1-Trichloroethane	5
B-2	11.0 - 12.5	Soil	Former UST	BQL 1,1,1 Trichloroethane	 29
B-3	11.0 - 12.5	Soil	Former UST	Tetrachloroethene	27
B-4	11.0 - 12.5	Soil	Former Septic	BQL	
B-5	11.0 - 12.5	Soil	Former Septic	BQL	
B-6	13.5 - 15.0	Soil	Former Septic	Tetrachloroethene	7
MW-1		Water	West side of Building	BQL	
MW-2		Water	Northwest corner of Building	1,1-Dichloroethane 1,1,1-Trichloroethane	49 1,500
MW-3		Water	Northeast corner of Building	Chloroform	14

BQL Below quantitation limit
ppb Parts per billion

As shown, slightly elevated concentrations (5 ppb and 29 ppb, respectively) of 1,1,1-Trichloroethane were detected in borings B-1 and B-3. An elevated concentration of tetrachloroethene was also detected in B-3.

The soil samples collected from the former septic tank area indicated elevated concentrations of 1,1,1-Trichloroethane and 1,1-Dichloroethane in monitoring well MW-2. A concentration of 14 ppb chloroform was also detected in monitoring well MW-3. No volatile organic compounds were detected above the quantitation limit in the sample collected from monitoring well MW-1.

It should be noted that acetone, 2-butanone, and methylene chloride are used as laboratory extraction solvents for various organic analyses. Although not summarized in Table 2, these compounds were present in the majority of all of the samples collected from the site. Acetone is also used routinely as a cleaning solvent for sampling equipment. Although the extraction and preparation processes are all performed by trained personnel in separate rooms under a vented fumehood, some vapors escape and are released into the laboratory atmosphere. The release of these vapors into the laboratory atmosphere is basically a random process dependent upon daily usage and the care and diligence of laboratory

personnel involved in handling the solvents. Once these compounds are released into the atmosphere they can contaminate any sample once it is removed from the sample container and exposed to the atmosphere. Given the extreme sensitivity of the analytical instrumentation, these compounds are often detected in low levels in environmental samples. The United States Environmental Protection Agency (U.S. EPA) recognizes concentrations of these contaminants up to five times the quantitation limit as laboratory artifacts. It should be emphasized that the presence of these laboratory artifacts in water matrix samples is a common occurrence in many analytical laboratories and is not limited to the laboratory used for this investigation.

3.3 Groundwater Conditions

Groundwater at the Arvin site was encountered at depths of 8.0 to 10.0 ft below ground surface. For the purpose of this project, an elevation of 710 ft above mean sea level was assigned to the parking lot surface on the north side of the Arvin site. Elevations for each monitoring well were then determined using this assumed datum. A summary of the water level information collected from the site is shown in Table 2.

Table 2
Summary of Water Level Information

Monitoring Well	Depth to Water (ft)	Elevation Measuring Point-Top of PVC Casing (ft)	Elevation Water Level (ft)
MW-1	16.65	721.87	705.22
MW-2	12.47	716.97	704.50
MW-3	12.77	712.88	700.11

Using this water level information, ATEC developed a groundwater contour map for the site as shown in Figure 4. As shown, the inferred direction of groundwater flow is onto the site from the west/northwest direction. This would indicate that monitoring well MW-2 is "upgradient" of the former UST area and the water quality at this location would be controlled by conditions off-site.

3.4 Asbestos

The results of the asbestos sampling are summarized in Table 3.

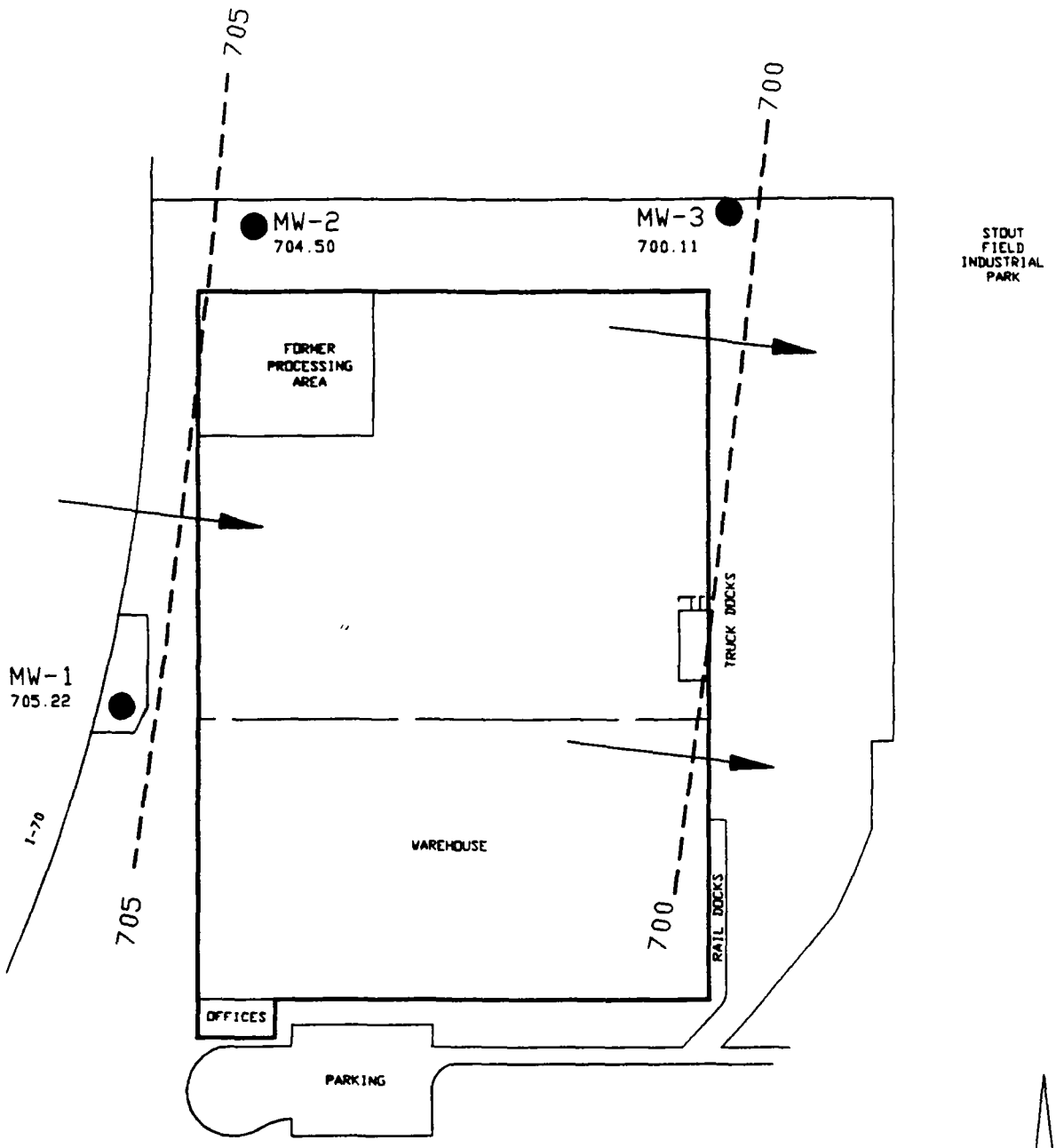
Table 3
Summary of Results
Asbestos Sampling

Sample	Location	Fiberglass	Cellulose	Asbestos
A-1	Front office drop ceiling tile	15 - 20	35 - 45	ND
M-1	Men's washroom drop ceiling tile	70 - 80	5 - 10	ND
W-1	Women's washroom drop ceiling tile	60 - 65	ND	ND

ND - Not detected

APPENDIX A

BORING LOGS
AND
MONITORING WELL CONSTRUCTION DIAGRAMS



EXPLANATION

704.5 ELEVATION WATER LEVEL 9/25/89

GROUNDWATER CONTOUR

INFERRED DIRECTION OF GROUNDWATER FLOW

GROUNDWATER CONTOUR MAP
SUBSURFACE INVESTIGATION & SAMPLING
ARVIN INDUSTRIES SITE
INDIANPOLIS, IN

PROJECT NO.	21-97509
SCALE	1" = 200'
FIGURE NO.	4

ATEC

ATEC Associates, Inc.

Consulting Environmental, Geotechnical and Materials Engineers

LOG OF BORING NO. B-1

CLIENT	Arvin Industries	JOB NO.	21-97509
PROJECT NAME	Subsurface Investigation	START DATE	9/21/89
PROJECT LOCATION	Airport Expressway	BORING METHOD	HSA
BORING LOCATION	Former UST location north side of building	ROCK CORE DIA.	IN.
FOREMAN	J. McClain	SHELBY TUBE DIA	IN.
INSPECTOR	L. Kahrs		

SOIL/ROCK DESCRIPTION Surface Elevation	STRATUM DEPTH ft.	DEPTH ft.	SAMPLE NO.	SPT (*)	REC %	TPV ppm (**)	REMARKS
0-0.5 Concrete (Fill material)							
Black cinders brown fine SAND and SILT, trace coarse Sand (Fill)(ML)			1	4/9/7		0.2	Offset four times
Brown fine medium SAND, some Silt, trace coarse Sand (SM)		5	2	5/6/6		0.0	
Brown medium SAND, some Silt, trace coarse Sand, moist (SM)			3	6/7/5		0.2	
Brown medium to coarse SAND, trace Silt, (wet)(SP)		10	4*	8/5/10		1.6	
Brown medium to coarse SAND, trace Silt, (wet)(SP)			5	19/22/25		0.8	

WATER LEVEL OBSERVATIONS
NOTED ON RODS 9.0 FT
AT COMPLETION 8.5 FT
AFTER ____ HRS. ____ FT

BORING METHODS
HSA-HOLLOW STEM AUGERS
CFA-CONT.FLIGHT AUGERS
HA-HAND AUGER

NOTES: (*)BLOWS/6 in., In Three 6 in. Increments
REC %: Sample Recovery, %
(**)TPV-Total Photoionizable Vapors ppm (parts per million)

ATEC Associates, Inc.

Consulting Environmental, Geotechnical and Materials Engineers

LOG OF BORING NO. B-2

CLIENT	Arvin Industries	JOB NO.	21-97509
PROJECT NAME	Subsurface Investigation	START DATE	9/21/89
PROJECT LOCATION	Airport Expressway	BORING METHOD	HSA
BORING LOCATION	Former UST location	ROCK CORE DIA.	IN.
FOREMAN	J. McClain	SHELBY TUBE DIA	IN.
INSPECTOR	L. Kahrs		

SOIL/ROCK DESCRIPTION Surface Elevation	STRATUM DEPTH ft.	DEPTH ft.	SAMPLE NO.	SPT (*)	REC %	TPV ppm (**)	REMARKS
0-0.5 Concrete (Fill material)							
Black cinders brown find SAND and SILT, trace coarse Sand (Fill) (ML)			1	3/1/2		0	
Brown fine medium SAND, some Silt, trace coarse Sand (SM)		5	2	3/5/5		0	
Brown medium SAND, some Silt, trace coarse Sand, moist (SM)			3	2/3/10		0.2	
Brown medium SAND, some Silt, trace coarse Sand, moist (SM)		10	4*	16/24/30		0.2	
Brown medium to coarse SAND, trace Silt, (wet)(SP)			5	18/31/39		0.2	
							*Sample collected for analysis

WATER LEVEL OBSERVATIONS
NOTED ON RODS FT
AT COMPLETION FT
AFTER HRS. FT

BORING METHODS
HSA-HOLLOW STEM AUGERS
CFA-CONT.FLIGHT AUGERS
HA-HAND AUGER

NOTES: (*)BLOWS/6 in., In Three 6 in. Increments
REC %: Sample Recovery, %
(**)TPV-Total Photoionizable Vapors ppm (parts per million)

ATEC Associates, Inc.

Consulting Environmental, Geotechnical and Materials Engineers

LOG OF BORING NO. B-3

CLIENT	Arvin Industries	JOB NO.	21-97509
PROJECT NAME	Subsurface Investigation	START DATE	9/21/89
PROJECT LOCATION	Airport Expressway	BORING METHOD	HSA
BORING LOCATION	Former UST location north side of building	ROCK CORE DIA.	IN.
FOREMAN	J. McClain	SHELBY TUBE DIA	IN.
INSPECTOR	L. Kahrs		

SOIL/ROCK DESCRIPTION Surface Elevation	STRATUM DEPTH ft.	DEPTH ft.	SAMPLE NO.	SPT (*)	REC %	TPV ppm (**)	REMARKS
0-0.5 Concrete (Fill material) Black cinders brown fine SAND and SILT, trace coarse Sand (Fill)(ML)			1	6/5/6		0	
Brown fine medium SAND, some Silt, trace coarse Sand (SM)		5	2	2/3/5		0	
Brown medium SAND, some Silt, trace coarse Sand, moist (SM)			3	7/7/9		0	
Brown medium to coarse SAND, trace Silt, (wet)(SP)		10	4*	10/18/25		0.2	
Brown medium to coarse SAND, trace Silt, (wet)(SP)			5	10/24/55/5		0.2	*Sample collected for analysis

WATER LEVEL OBSERVATIONS
NOTED ON RODS FT
AT COMPLETION FT
AFTER HRS. FT

BORING METHODS
HSA-HOLLOW STEM AUGERS
CFA-CONT.FLIGHT AUGERS
HA-HAND AUGER

NOTES: (*)BLOWS/6 in., In Three 6 in. Increments
REC %: Sample Recovery, %
(**)TPV-Total Photoionizable Vapors ppm (parts per million)

ATEC Associates, Inc.

Consulting Environmental, Geotechnical and Materials Engineers

LOG OF BORING NO. B-4

CLIENT	Arvin Industries	JOB NO.	21-97509
PROJECT NAME	Subsurface Investigation	START DATE	9/21/89
PROJECT LOCATION	Airport Expressway	BORING METHOD	HSA
BORING LOCATION	Former septic area	ROCK CORE DIA.	IN.
FOREMAN	J. McClain	SHELBY TUBE DIA	IN.
INSPECTOR	L. Kahrs		

SOIL/ROCK DESCRIPTION Surface Elevation	STRATUM DEPTH ft.	DEPTH ft.	SAMPLE NO.	SPT (*)	REC %	TPV ppm (**)	REMARKS
Brown to gray SILT, trace fine Sand (ML)			1	3/3/4		0	
Brown fine SAND, some Silt, trace coarse Sand (SM)		5	2	1/1/3		0	
Brown fine SAND except little coarse SAND (SM)			3	8/11/15		0	
Brown fine medium SAND, trace Silt (SP)		10	4	9/13/16		0.2	
Brown medium coarse SAND (wet)(SP)			5*	12/19/23		0.2	*Sample collected for analysis

WATER LEVEL OBSERVATIONS
NOTED ON RODS 10.5 FT
AT COMPLETION 8.5 FT
AFTER ____ HRS. ____ FT

BORING METHODS
HSA-HOLLOW STEM AUGERS
CFA-CONT.FLIGHT AUGERS
HA-HAND AUGER

NOTES: (*)BLOWS/6 in., In Three 6 in. Increments
REC %: Sample Recovery, %
(**)TPV-Total Photoionizable Vapors ppm (parts per million)

ATEC Associates, Inc.

Consulting Environmental, Geotechnical and Materials Engineers

LOG OF BORING NO. B-5

CLIENT	Arvin Industries	JOB NO.	21-97509
PROJECT NAME	Subsurface Investigation	START DATE	9/21/89
PROJECT LOCATION	Airport Expressway	BORING METHOD	HSA
BORING LOCATION	Former septic system - west of building	ROCK CORE DIA.	IN.
FOREMAN	J. McClain	SHELBY TUBE DIA	IN.
INSPECTOR	L. Kahrs		

SOIL/ROCK DESCRIPTION Surface Elevation	STRATUM DEPTH ft.	DEPTH ft.	SAMPLE NO.	SPT (*)	REC %	TPV ppm (**)	REMARKS
Brown SILT, some CLAY, moist (ML)			1	3/3/6		0	
Dark brown fine SAND, some SILT (moist) (SM)		5	2	1/2/2		0	
Dark brown fine SAND except sandstone fragment in tip of spoon (SM)			3	4/21/26		0	
Brown medium SAND, some Silt, trace Gravel (moist)(SM)		10	4	13/17/19		0.2	
Gray medium coarse SAND, some Gravel (moist)(SP)			5*	13/24/27		0.2	*Sample collected for analysis

WATER LEVEL OBSERVATIONS
NOTED ON RODS FT
AT COMPLETION FT
AFTER HRS. FT

BORING METHODS
HSA-HOLLOW STEM AUGERS
CFA-CONT.FLIGHT AUGERS
HA-HAND AUGER

NOTES: (*)BLOWS/6 in., In Three 6 in. Increments
REC %: Sample Recovery, %
(**)TPV-Total Photoionizable Vapors ppm (parts per million)

ATEC Associates, Inc.

Consulting Environmental, Geotechnical and Materials Engineers

LOG OF BORING NO. B-6

CLIENT	Arvin Industries	JOB NO.	21-97509
PROJECT NAME	Subsurface Investigation	START DATE	9/21/89
PROJECT LOCATION	Airport Expressway	BORING METHOD	HSA
BORING LOCATION	Former septic system - west side of building	ROCK CORE DIA.	IN.
FOREMAN	J. McClain	SHELBY TUBE DIA	IN.
INSPECTOR	L. Kahrs		

SOIL/ROCK DESCRIPTION Surface Elevation	STRATUM DEPTH ft.	DEPTH ft.	SAMPLE NO.	SPT (*)	REC %	TPV ppm (**)	REMARKS
Dark brown SILT and CLAY, some organic material (ML)			1			0	
Brown fine SAND, some Silt, trace Gravel at tip of spoon (SM)		5	2			0	
Brown fine SAND grades to some Gravel (SM)			3			0	
Brown fine to medium SAND, some Silt (moist)(SM)		10	4*			0.2	
Brown fine to medium SAND and SILT, some Gravel (wet at top) (SM)			5			0.2	
Brown fine to medium SAND and SILT, some Gravel (wet at top) (SM)		15	6	17/31/29		0.6	*Sample collected for analysis

WATER LEVEL OBSERVATIONS
NOTED ON RODS 13.5 FT
AT COMPLETION 10.0 FT
AFTER ____ HRS. ____ FT

BORING METHODS
HSA-HOLLOW STEM AUGERS
CFA-CONT.FLIGHT AUGERS
HA-HAND AUGER

NOTES: (*)BLOWS/6 in., In Three 6 in. Increments
REC %: Sample Recovery, %
(**)TPV-Total Photoionizable Vapors ppm (parts per million)

FIELD CLASSIFICATION SYSTEM FOR SOIL EXPLORATION

NON COHESIVE SOILS
(Silt, Sand, Gravel and Combinations)

Density

Very Loose	- 5 blows/ft. or less
Loose	- 6 to 10 blows/ft.
Medium Dense	-11 to 30 blows/ft.
Dense	-31 to 50 blows/ft.
Very Dense	-51 blows/ft. or more

Relative Proportions

Descriptive Term	Percent
Trace	1 -10
Little	11-20
Some	21-35
And	36-50

Particle Size Identification

Boulders	-8 inch diameter or more	
Cobbles	-3 to 8 inch diameter	
Gravel	-Coarse	-1 to 3 inch
	Medium	-½ to 1 inch
	Fine	-¼ to ½ inch
Sand	-Coarse	2.00mm to ¼ inch (dia. of pencil lead)
	Medium	0.42 to 2.00mm (dia. of broom straw)
	Fine	0.074 to 0.42mm (Dia. of human hair)
Silt		0.074 to 0.002mm (Cannot see particles)

COHESIVE SOILS
(Clay, Silt and Combinations)

Consistency

Very Soft	- 3 blows/ft. or less
Soft	- 4 to 5 blows/ft.
Medium Stiff	- 6 to 10 blows/ft.
Stiff	-11 to 15 blows/ft.
Very Stiff	-16 top 30 blows/ft.
Hard	-31 blows/ft. or more

Plasticity

Degree of Plasticity	Plasticity Index
None to slight	0- 4
Slight	5- 7
Medium	8-22
High to Very High	over 22

Classification on logs are made by visual inspection of samples.

Standard Penetration Test — Driving a 2.0" O.D., 1-3/8" I.D., sampler a distance of 1.0 foot into undisturbed soil with a 140 pound hammer free falling a distance of 30.0 inches. It is customary for ATEC to drive the spoon 6.0 inches to seat into undisturbed soil, then perform the test. The number of hammer blows for seating the spoon and making the test are recorded for each 6.0 inches of penetration on the drill log. (Example — 6/8/9). The standard penetration test result can be obtained by adding the last two figures (i.e. 8+ 9 = 17 blows/ft.). (ASTM D-1586-67)

Strata Changes — In the column "Soil Descriptions" on the drill log the horizontal lines represent strata changes. A solid line (_____) represents an actually observed change, a dashed line (_ _ _ _) represents an estimated change.

Ground Water observations were made at the times indicated. Porosity of soil strata, weather conditions, topography, etc., may cause changes in the water levels indicated on the logs.

MW-1

DEPTH, FT

SOIL PROFILE

CONSTRUCTION DETAILS

PROTECTIVE COVER

Note: blank drill to 22.5' below ground surface

RISER	15.0'
GROUT	9.0' - ground surface
BENTONITE SEAL	10.0' - 9.0'
SAND PACK	18.0' - 10.0'
SCREEN	22.5' - 12.5'
NATURAL PACK	22.5' - 18.0'

Bottom of Test Boring @ 22.5

Construction Material:	Schedule 40 PVC
Well Diameter:	2 in.
Screen Length:	10.0'
Slot Size:	0.010
Development Method:	Bailer
Development Duration:	1 hour

Groundwater Level Observations

Date	Elev., ft
9/28/89	705.22

MONITORING WELL DETAILS

PROJECT NO. 21-97509

SCALE None

MW-2

DEPTH, FT

SOIL PROFILE

CONSTRUCTION DETAILS

PROTECTIVE COVER

Blank drill to 16.5' below ground surface

RISER	10.0'
GROUT	5.0' - ground surface
BENTONITE SEAL	6.0' - 5.0'
SAND PACK	11.5' - 6.0'
SCREEN	16.5' - 6.5'
NATURAL PACK	16.5' - 11.5'

Bottom of Test Boring @ 16.5'

Construction Material:	Schedule 40 PVC
Well Diameter:	2 in.
Screen Length:	10.0'
Slot Size:	0.010
Development Method:	Bailer
Development Duration:	1 hour

Groundwater Level Observations

Date	Elev., ft
9/28/89	704.50

MONITORING WELL DETAILS

PROJECT NO. 21-97509

SCALE None

AEC

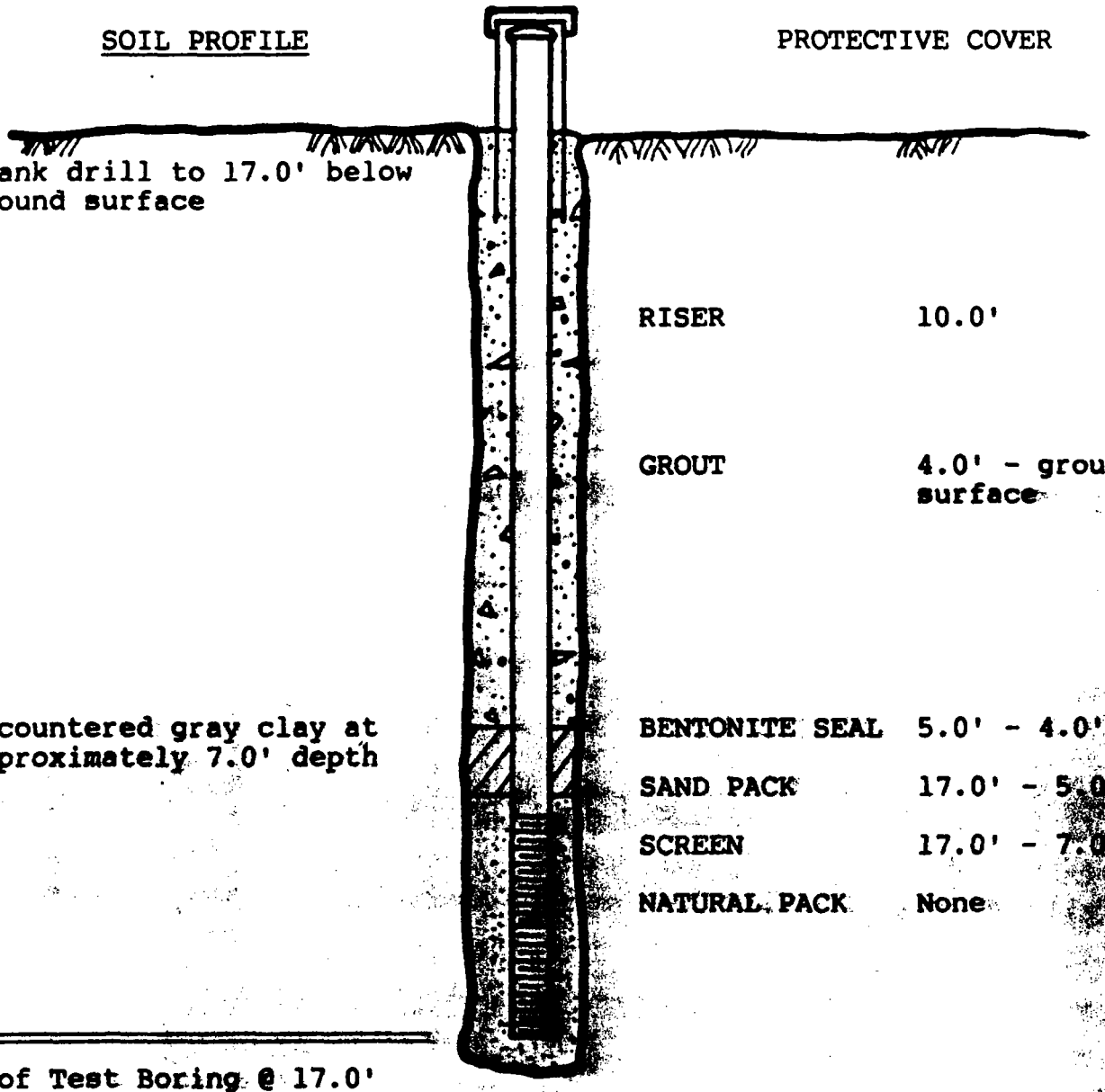
MW-3

DEPTH, FT

SOIL PROFILE

CONSTRUCTION DETAILS

PROTECTIVE COVER



Blank drill to 17.0' below ground surface

Encountered gray clay at approximately 7.0' depth

Bottom of Test Boring @ 17.0'

RISER	10.0'
GROUT	4.0' - ground surface
BENTONITE SEAL	5.0' - 4.0'
SAND PACK	17.0' - 5.0'
SCREEN	17.0' - 7.0'
NATURAL PACK	None

Construction Material:	Schedule 40 PVC
Well Diameter:	2 in.
Screen Length:	10.0'
Slot Size:	0.010
Development Method:	Bailer
Development Duration:	1 hour

Groundwater Level Observations

Date	Elev., ft
9/28/89	700.11

MONITORING WELL DETAILS

PROJECT NO. 21-97509

SCALE None

APPENDIX B

LABORATORY RESULTS

)nsultants

220

:: Six Soil/Three Water VOA
SW 846 Method 8240
U.S. EPA Method 624
Forty-eight Hour Rush
Arvin Industries, Inc.
ATEC Project Number 21-97509

results of the Organic Analyses for the three il samples which were submitted to the ATEC tical Testing Division on September 22, 1989, on in Industries, Inc. The volatile samples were gan 1020 OWA and Incos 50 GC/MS/DS systems, erincos Software, via SW 846 Method 8240 for Compounds in soil and U.S. EPA Method 624 for s in water. Prior to analysis the system was Bromofluorobenzene and calibrated with the rd.

ıality Control information will be maintained in ion files, a copy of which can be forwarded to you fter a thirty-day period, a fee will be assessed al information.

easure serving you and, as always, if there are any ning these results or the ATEC Policies, please act me.

Respectfully submitted,

ATEC Associates, Inc.

Keith S. Kline

Keith S. Kline
Environmental/Analytical
Testing Division

ANALYTICAL RESULTS

ATEC Lab No. 91755A2

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Trans-1, 3-Dichloropropene	10061-02-6	< 5	5
Trichloroethene	79-01-6	< 5*	5
Dibromochloromethane	124-48-1	< 5	5
1,1,2-Trichloroethane	79-00-5	< 5	5
Benzene	71-43-2	< 5	5
cis-1,3-Dichloropropene	10061-01-5	< 5	5
2-Chloroethylvinylether	110-75-8	<10	10
Bromoform	75-25-2	< 5	5
4-Methyl-2-Pentanone	108-10-1	<10	10
2-Hexanone	591-78-6	<10	10
Tetrachloroethene	127-18-4	< 5*	5
1,1,2,2-Tetrachloroethane	79-34-5	< 5	5
Toluene	108-88-3	< 5*	5
Chlorobenzene	108-90-7	< 5	5
Ethylbenzene	100-41-4	< 5	5
Styrene	100-42-5	< 5	5
Total Xylenes		< 5	5

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: SW 846 Method 8240

Analyst: D. Luckenbill
Verified: K. Kline
Date Reported: September 26, 1989

Respectfully submitted,

Keith S. Kline

Environmental/Analytical Testing Division

Client: Arvin Industries, Inc.
Client Address: 1531 13th Street
Columbus, IN 47201

Client Sample Identification: B-2
Sample Matrix: Soil
Date Sample Collected: September 21, 1989
Date Sample Received: September 22, 1989
Date Sample Analyzed: September 25, 1989
Processed By: FEB

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

ATEC Lab No. 91755B

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Chloromethane	74-87-3	<23	23
Bromomethane	74-83-9	<23	23
Vinyl Chloride	75-01-4	<23	23
Chloroethane	75-00-3	<23	23
Methylene Chloride	75-09-2	40	11
Acetone	67-64-1	<23	23
Carbon Disulfide	75-15-0	<11	11
1,1-Dichloroethene	75-35-4	<11	11
1,1-Dichloroethane	75-35-3	<11	11
Trans-1,2-Dichloroethene	156-60-5	<11	11
Chloroform	67-66-3	<11	11
1,2-Dichloroethane	107-06-2	<11	11
2-Butanone	78-93-3	<23	23
1,1,1-Trichloroethane	71-55-6	<11	11
Carbon Tetrachloride	56-23-5	<11	11
Vinyl Acetate	108-05-4	<23	23
Bromodichloromethane	75-27-4	<11	11
1,2-Dichloropropane	78-87-5	<11	11

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. 91755B

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Trans-1, 3-Dichloropropene	10061-02-6	<11	11
Trichloroethene	79-01-6	<11	11
Dibromochloromethane	124-48-1	<11	11
1,1,2-Trichloroethane	79-00-5	<11	11
Benzene	71-43-2	<11	11
cis-1,3-Dichloropropene	10061-01-5	<11	11
2-Chloroethylvinylether	110-75-8	<23	23
Bromoform	75-25-2	<11	11
4-Methyl-2-Pentanone	108-10-1	<23	23
2-Hexanone	591-78-6	<23	23
Tetrachloroethene	127-18-4	<11	11
1,1,2,2-Tetrachloroethane	79-34-5	<11	11
Toluene	108-88-3	<11	11
Chlorobenzene	108-90-7	<11	11
Ethylbenzene	100-41-4	<11	11
Styrene	100-42-5	<11	11
Total Xylenes		<11	11

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: SW 846 Method 8240

Analyst: M. McGill
Verified: K. Kline
Date Reported: September 26, 1989

Respectfully submitted,

Keith S. Kline

Environmental/Analytical Testing Division

Client: Arvin Industries, Inc.
Client Address: 1531 13th Street
Columbus, IN 47201

Client Sample Identification: B-3
Sample Matrix: Soil
Date Sample Collected: September 21, 1989
Date Sample Received: September 22, 1989
Date Sample Analyzed: September 25, 1989
Processed By: FEB

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

ATEC Lab No. 91755C

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Chloromethane	74-87-3	<14	14
Bromomethane	74-83-9	<14	14
Vinyl Chloride	75-01-4	<14	14
Chloroethane	75-00-3	<14	14
Methylene Chloride	75-09-2	31	7
Acetone	67-64-1	<14	14
Carbon Disulfide	75-15-0	< 7	7
1,1-Dichloroethene	75-35-4	< 7	7
1,1-Dichloroethane	75-35-3	< 7	7
Trans-1,2-Dichloroethene	156-60-5	< 7	7
Chloroform	67-66-3	< 7	7
1,2-Dichloroethane	107-06-2	< 7	7
2-Butanone	78-93-3	<14	14
1,1,1-Trichloroethane	71-55-6	29	7
Carbon Tetrachloride	56-23-5	< 7	7
Vinyl Acetate	108-05-4	<14	14
Bromodichloromethane	75-27-4	< 7	7
1,2-Dichloropropane	78-87-5	< 7	7

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. 91755C

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Trans-1, 3-Dichloropropene	10061-02-6	< 7	7
Trichloroethene	79-01-6	< 7	7
Dibromochloromethane	124-48-1	< 7	7
1,1,2-Trichloroethane	79-00-5	< 7	7
Benzene	71-43-2	< 7	7
cis-1,3-Dichloropropene	10061-01-5	< 7	7
2-Chloroethylvinylether	110-75-8	<14	14
Bromoform	75-25-2	< 7	7
4-Methyl-2-Pentanone	108-10-1	<14	14
2-Hexanone	591-78-6	<14	14
Tetrachloroethene	127-18-4	27	7
1,1,2,2-Tetrachloroethane	79-34-5	< 7	7
Toluene	108-88-3	< 7	7
Chlorobenzene	108-90-7	< 7	7
Ethylbenzene	100-41-4	< 7	7
Styrene	100-42-5	< 7	7
Total Xylenes		< 7	7

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: SW 846 Method 8240

Analyst: M. McGill
Verified: K. Kline
Date Reported: September 26, 1989

Respectfully submitted,

Keith S. Kline

Environmental/Analytical Testing Division

Client: Arvin Industries, Inc.
Client Address: 1531 13th Street
Columbus, IN 47201

Client Sample Identification: B-4
Sample Matrix: Soil
Date Sample Collected: September 21, 1989
Date Sample Received: September 22, 1989
Date Sample Analyzed: September 25, 1989
Processed By: FEB

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

ATEC Lab No. 91755D

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Chloromethane	74-87-3	<12	12
Bromomethane	74-83-9	<12	12
Vinyl Chloride	75-01-4	<12	12
Chloroethane	75-00-3	<12	12
Methylene Chloride	75-09-2	29	6
Acetone	67-64-1	<12	12
Carbon Disulfide	75-15-0	< 6	6
1,1-Dichloroethene	75-35-4	< 6	6
1,1-Dichloroethane	75-35-3	< 6	6
Trans-1,2-Dichloroethene	156-60-5	< 6	6
Chloroform	67-66-3	< 6	6
1,2-Dichloroethane	107-06-2	< 6	6
2-Butanone	78-93-3	<12	12
1,1,1-Trichloroethane	71-55-6	< 6	6
Carbon Tetrachloride	56-23-5	< 6	6
Vinyl Acetate	108-05-4	<12	12
Bromodichloromethane	75-27-4	< 6	6
1,2-Dichloropropane	78-87-5	< 6	6

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. 91755D

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Trans-1, 3-Dichloropropene	10061-02-6	< 6	6
Trichloroethene	79-01-6	< 6	6
Dibromochloromethane	124-48-1	< 6	6
1,1,2-Trichloroethane	79-00-5	< 6	6
Benzene	71-43-2	< 6	6
cis-1,3-Dichloropropene	10061-01-5	< 6	6
2-Chloroethylvinylether	110-75-8	<12	12
Bromoform	75-25-2	< 6	6
4-Methyl-2-Pentanone	108-10-1	<12	12
2-Hexanone	591-78-6	<12	12
Tetrachloroethene	127-18-4	< 6*	6
1,1,2,2-Tetrachloroethane	79-34-5	< 6	6
Toluene	108-88-3	< 6	6
Chlorobenzene	108-90-7	< 6	6
Ethylbenzene	100-41-4	< 6	6
Styrene	100-42-5	< 6	6
Total Xylenes		< 6	6

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: SW 846 Method 8240

Analyst: M. McGill
Verified: K. Kline
Date Reported: September 26, 1989

Respectfully submitted,

Kevin S. Kline

Environmental/Analytical Testing Division

Client: Arvin Industries, Inc.
Client Address: 1531 13th Street
Columbus, IN 47201

Client Sample Identification: B-5
Sample Matrix: Soil
Date Sample Collected: September 21, 1989
Date Sample Received: September 22, 1989
Date Sample Analyzed: September 26, 1989
Processed By: FEB

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

ATEC Lab No. 91755E

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Chloromethane	74-87-3	<10	10
Bromomethane	74-83-9	<10	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<10	10
Methylene Chloride	75-09-2	31	5
Acetone	67-64-1	<10*	10
Carbon Disulfide	75-15-0	< 5	5
1,1-Dichloroethene	75-35-4	< 5	5
1,1-Dichloroethane	75-35-3	< 5	5
Trans-1,2-Dichloroethene	156-60-5	< 5	5
Chloroform	67-66-3	< 5	5
1,2-Dichloroethane	107-06-2	< 5	5
2-Butanone	78-93-3	<10	10
1,1,1-Trichloroethane	71-55-6	< 5	5
Carbon Tetrachloride	56-23-5	< 5	5
Vinyl Acetate	108-05-4	<10	10
Bromodichloromethane	75-27-4	< 5	5
1,2-Dichloropropane	78-87-5	< 5	5

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. 91755E

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Trans-1, 3-Dichloropropene	10061-02-6	< 5	5
Trichloroethene	79-01-6	< 5	5
Dibromochloromethane	124-48-1	< 5	5
1,1,2-Trichloroethane	79-00-5	< 5	5
Benzene	71-43-2	< 5	5
cis-1,3-Dichloropropene	10061-01-5	< 5	5
2-Chloroethylvinylether	110-75-8	<10	10
Bromoform	75-25-2	< 5	5
4-Methyl-2-Pentanone	108-10-1	<10	10
2-Hexanone	591-78-6	<10	10
Tetrachloroethene	127-18-4	< 5	5
1,1,2,2-Tetrachloroethane	79-34-5	< 5	5
Toluene	108-88-3	< 5*	5
Chlorobenzene	108-90-7	< 5	5
Ethylbenzene	100-41-4	< 5	5
Styrene	100-42-5	< 5	5
Total Xylenes		< 5	5

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: SW 846 Method 8240

Analyst: D. Luckenbill
Verified: K. Kline
Date Reported: September 26, 1989

Respectfully submitted,

Kevin S. Kline

Environmental/Analytical Testing Division

Client: Arvin Industries, Inc.
Client Address: 1531 13th Street
Columbus, IN 47201

Client Sample Identification: B-6
Sample Matrix: Soil
Date Sample Collected: September 21, 1989
Date Sample Received: September 22, 1989
Date Sample Analyzed: September 25, 1989
Processed By: FEB

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

ATEC Lab No. 91755F

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Chloromethane	74-87-3	<12	12
Bromomethane	74-83-9	<12	12
Vinyl Chloride	75-01-4	<12	12
Chloroethane	75-00-3	<12	12
Methylene Chloride	75-09-2	32	6
Acetone	67-64-1	<12	12
Carbon Disulfide	75-15-0	< 6	6
1,1-Dichloroethene	75-35-4	< 6	6
1,1-Dichloroethane	75-35-3	< 6	6
Trans-1,2-Dichloroethene	156-60-5	< 6	6
Chloroform	67-66-3	< 6	6
1,2-Dichloroethane	107-06-2	< 6	6
2-Butanone	78-93-3	<12	12
1,1,1-Trichloroethane	71-55-6	< 6	6
Carbon Tetrachloride	56-23-5	< 6	6
Vinyl Acetate	108-05-4	<12	12
Bromodichloromethane	75-27-4	< 6	6
1,2-Dichloropropane	78-87-5	< 6	6

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. 91755F

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Trans-1, 3-Dichloropropene	10061-02-6	< 6	6
Trichloroethene	79-01-6	< 6	6
Dibromochloromethane	124-48-1	< 6	6
1,1,2-Trichloroethane	79-00-5	< 6	6
Benzene	71-43-2	< 6	6
cis-1,3-Dichloropropene	10061-01-5	< 6	6
2-Chloroethylvinylether	110-75-8	<12	12
Bromoform	75-25-2	< 6	6
4-Methyl-2-Pentanone	108-10-1	<12	12
2-Hexanone	591-78-6	<12	12
Tetrachloroethene	127-18-4	7	6
1,1,2,2-Tetrachloroethane	79-34-5	< 6	6
Toluene	108-88-3	< 6*	6
Chlorobenzene	108-90-7	< 6	6
Ethylbenzene	100-41-4	< 6	6
Styrene	100-42-5	< 6	6
Total Xylenes		< 6	6

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: SW 846 Method 8240

Analyst: M. McGill
Verified: K. Kline
Date Reported: September 26, 1989

Respectfully submitted,

Keith S. Kline

Environmental/Analytical Testing Division

Client: Arvin Industries, Inc.
Client Address: 1531 13th Street
Columbus, IN 47201

Client Sample Identification: MW-1
Sample Matrix: Water
Date Sample Collected: September 22, 1989
Date Sample Received: September 22, 1989
Date Sample Analyzed: September 25, 1989
Processed By: FEB

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

ATEC Lab No. 91755G

Analyte	CAS Number	Concentration (ug/L)	Quantitation Limit (ug/L)
Chloromethane	74-87-3	<10	10
Bromomethane	74-83-9	<10	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<10	10
Methylene Chloride	75-09-2	9	5
Acetone	67-64-1	<10*	10
Carbon Disulfide	75-15-0	< 5	5
1,1-Dichloroethene	75-35-4	< 5	5
1,1-Dichloroethane	75-35-3	< 5	5
Trans-1,2-Dichloroethene	156-60-5	< 5	5
Chloroform	67-66-3	< 5	5
1,2-Dichloroethane	107-06-2	< 5	5
2-Butanone	78-93-3	<10*	10
1,1,1-Trichloroethane	71-55-6	< 5	5
Carbon Tetrachloride	56-23-5	< 5	5
Vinyl Acetate	108-05-4	<10	10
Bromodichloromethane	75-27-4	< 5	5
1,2-Dichloropropane	78-87-5	< 5	5

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. 91755G

Analyte	CAS Number	Concentration (ug/L)	Quantitation Limit (ug/L)
Trans-1, 3-Dichloropropene	10061-02-6	< 5	5
Trichloroethene	79-01-6	< 5	5
Dibromochloromethane	124-48-1	< 5	5
1,1,2-Trichloroethane	79-00-5	< 5	5
Benzene	71-43-2	< 5	5
cis-1,3-Dichloropropene	10061-01-5	< 5	5
2-Chloroethylvinylether	110-75-8	<10	10
Bromoform	75-25-2	< 5	5
4-Methyl-2-Pentanone	108-10-1	<10	10
2-Hexanone	591-78-6	<10	10
Tetrachloroethene	127-18-4	< 5	5
1,1,2,2-Tetrachloroethane	79-34-5	< 5	5
Toluene	108-88-3	< 5	5
Chlorobenzene	108-90-7	< 5	5
Ethylbenzene	100-41-4	< 5	5
Styrene	100-42-5	< 5	5
Total Xylenes		< 5	5

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: U.S. EPA Method 624

Analyst: D. Luckenbill
Verified: K. Kline
Date Reported: September 26, 1989

Respectfully submitted,

Keith S. Kline

Environmental/Analytical Testing Division

Client: Arvin Industries, Inc.
Client Address: 1531 13th Street
Columbus, IN 47201

Client Sample Identification: MW-2
Sample Matrix: Water
Date Sample Collected: September 22, 1989
Date Sample Received: September 22, 1989
Date Sample Analyzed: September 25, 1989
Processed By: FEB

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

ATEC Lab No. 91755H

Analyte	CAS Number	Concentration (ug/L)	Quantitation Limit (ug/L)
Chloromethane	74-87-3	<50	50
Bromomethane	74-83-9	<50	50
Vinyl Chloride	75-01-4	<50	50
Chloroethane	75-00-3	<50	50
Methylene Chloride	75-09-2	65	25
Acetone	67-64-1	<50*	50
Carbon Disulfide	75-15-0	<25	25
1,1-Dichloroethene	75-35-4	49	25
1,1-Dichloroethane	75-35-3	<25*	25
Trans-1,2-Dichloroethene	156-60-5	<25	25
Chloroform	67-66-3	<25	25
1,2-Dichloroethane	107-06-2	<25	25
2-Butanone	78-93-3	<50	50
1,1,1-Trichloroethane	71-55-6	1,500	25
Carbon Tetrachloride	56-23-5	<25	25
Vinyl Acetate	108-05-4	<50	50
Bromodichloromethane	75-27-4	<25	25
1,2-Dichloropropane	78-87-5	<25	25

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. 91755H

Analyte	CAS Number	Concentration (ug/L)	Quantitation Limit (ug/L)
Trans-1, 3-Dichloropropene	10061-02-6	<25	25
Trichloroethene	79-01-6	<25	25
Dibromochloromethane	124-48-1	<25	25
1,1,2-Trichloroethane	79-00-5	<25*	25
Benzene	71-43-2	<25	25
cis-1,3-Dichloropropene	10061-01-5	<25	25
2-Chloroethylvinylether	110-75-8	<50	50
Bromoform	75-25-2	<25	25
4-Methyl-2-Pentanone	108-10-1	<50	50
2-Hexanone	591-78-6	<50	50
Tetrachloroethene	127-18-4	<25	25
1,1,2,2-Tetrachloroethane	79-34-5	<25	25
Toluene	108-88-3	<25*	25
Chlorobenzene	108-90-7	<25	25
Ethylbenzene	100-41-4	<25	25
Styrene	100-42-5	<25	25
Total Xylenes		<25	25

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: U.S. EPA Method 624

Analyst: D. Luckenbill
Verified: K. Kline
Date Reported: September 26, 1989

Respectfully submitted,

Keith S. Kline

Environmental/Analytical Testing Division

Client: Arvin Industries, Inc.
Client Address: 1531 13th Street
Columbus, IN 47201

Client Sample Identification: MW-3
Sample Matrix: Water
Date Sample Collected: September 22, 1989
Date Sample Received: September 22, 1989
Date Sample Analyzed: September 25, 1989
Processed By: FEB

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

ATEC Lab No. 91755I

Analyte	CAS Number	Concentration (ug/L)	Quantitation Limit (ug/L)
Chloromethane	74-87-3	<10	10
Bromomethane	74-83-9	<10	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<10	10
Methylene Chloride	75-09-2	27	5
Acetone	67-64-1	<10*	10
Carbon Disulfide	75-15-0	< 5	5
1,1-Dichloroethene	75-35-4	< 5	5
1,1-Dichloroethane	75-35-3	< 5	5
Trans-1,2-Dichloroethene	156-60-5	< 5	5
Chloroform	67-66-3	14	5
1,2-Dichloroethane	107-06-2	< 5	5
2-Butanone	78-93-3	<10*	10
1,1,1-Trichloroethane	71-55-6	< 5	5
Carbon Tetrachloride	56-23-5	< 5	5
Vinyl Acetate	108-05-4	<10	10
Bromodichloromethane	75-27-4	< 5*	5
1,2-Dichloropropane	78-87-5	< 5	5

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. 91755I

Analyte	CAS Number	Concentration (ug/L)	Quantitation Limit (ug/L)
Trans-1, 3-Dichloropropene	10061-02-6	< 5	5
Trichloroethene	79-01-6	< 5	5
Dibromochloromethane	124-48-1	< 5	5
1,1,2-Trichloroethane	79-00-5	< 5	5
Benzene	71-43-2	< 5	5
cis-1,3-Dichloropropene	10061-01-5	< 5	5
2-Chloroethylvinylether	110-75-8	<10	10
Bromoform	75-25-2	< 5	5
4-Methyl-2-Pentanone	108-10-1	<10	10
2-Hexanone	591-78-6	<10	10
Tetrachloroethene	127-18-4	< 5	5
1,1,2,2-Tetrachloroethane	79-34-5	< 5	5
Toluene	108-88-3	< 5*	5
Chlorobenzene	108-90-7	< 5	5
Ethylbenzene	100-41-4	< 5	5
Styrene	100-42-5	< 5	5
Total Xylenes		< 5	5

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: U.S. EPA Method 624

Analyst: D. Luckenbill
Verified: K. Kline
Date Reported: September 26, 1989

Respectfully submitted,

Keith S. Kline

Environmental/Analytical Testing Division

Client: Arvin Industries, Inc.
Client Address: 1531 13th Street
Columbus, IN 47201

Client Sample Identification: Method Blank - 1020
Sample Matrix: Water
Date Sample Analyzed: September 25, 1989
Processed By: FEB

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

ATEC Lab No. BLANK092589

Analyte	CAS Number	Concentration (ug/L)	Quantitation Limit (ug/L)
Chloromethane	74-87-3	<10	10
Bromomethane	74-83-9	<10	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<10	10
Methylene Chloride	75-09-2	65	5
Acetone	67-64-1	<10	10
Carbon Disulfide	75-15-0	< 5	5
1,1-Dichloroethene	75-35-4	< 5	5
1,1-Dichloroethane	75-35-3	< 5	5
Trans-1,2-Dichloroethene	156-60-5	< 5	5
Chloroform	67-66-3	< 5	5
1,2-Dichloroethane	107-06-2	< 5	5
2-Butanone	78-93-3	<10*	10
1,1,1-Trichloroethane	71-55-6	< 5	5
Carbon Tetrachloride	56-23-5	< 5	5
Vinyl Acetate	108-05-4	<10	10
Bromodichloromethane	75-27-4	< 5	5
1,2-Dichloropropane	78-87-5	< 5	5

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. BLANK092589

Analyte	CAS Number	Concentration (ug/L)	Quantitation Limit (ug/L)
Trans-1, 3-Dichloropropene	10061-02-6	< 5	5
Trichloroethene	79-01-6	< 5	5
Dibromochloromethane	124-48-1	< 5	5
1,1,2-Trichloroethane	79-00-5	< 5	5
Benzene	71-43-2	< 5	5
cis-1,3-Dichloropropene	10061-01-5	< 5	5
2-Chloroethylvinylether	110-75-8	<10	10
Bromoform	75-25-2	< 5	5
4-Methyl-2-Pentanone	108-10-1	<10	10
2-Hexanone	591-78-6	<10	10
Tetrachloroethene	127-18-4	< 5	5
1,1,2,2-Tetrachloroethane	79-34-5	< 5	5
Toluene	108-88-3	< 5	5
Chlorobenzene	108-90-7	< 5	5
Ethylbenzene	100-41-4	< 5	5
Styrene	100-42-5	< 5	5
Total Xylenes		< 5	5

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: U.S. EPA Method 624

Analyst: D. Luckenbill
Verified: K. Kline
Date Reported: September 26, 1989

Respectfully submitted,

Keith S. Kline

Environmental/Analytical Testing Division

Client: Arvin Industries, Inc.
Client Address: 1531 13th Street
Columbus, IN 47201

Client Sample Identification: Method Blank - 1020
Sample Matrix: Soil
Date Sample Analyzed: September 25, 1989
Processed By: FEB

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

ATEC Lab No. BLANK092589

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Chloromethane	74-87-3	<10	10
Bromomethane	74-83-9	<10	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<10	10
Methylene Chloride	75-09-2	65	5
Acetone	67-64-1	<10	10
Carbon Disulfide	75-15-0	< 5	5
1,1-Dichloroethene	75-35-4	< 5	5
1,1-Dichloroethane	75-35-3	< 5	5
Trans-1,2-Dichloroethene	156-60-5	< 5	5
Chloroform	67-66-3	< 5	5
1,2-Dichloroethane	107-06-2	< 5	5
2-Butanone	78-93-3	<10*	10
1,1,1-Trichloroethane	71-55-6	< 5	5
Carbon Tetrachloride	56-23-5	< 5	5
Vinyl Acetate	108-05-4	<10	10
Bromodichloromethane	75-27-4	< 5	5
1,2-Dichloropropane	78-87-5	< 5	5

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. BLANK092589

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Trans-1, 3-Dichloropropene	10061-02-6	< 5	5
Trichloroethene	79-01-6	< 5	5
Dibromochloromethane	124-48-1	< 5	5
1,1,2-Trichloroethane	79-00-5	< 5	5
Benzene	71-43-2	< 5	5
cis-1,3-Dichloropropene	10061-01-5	< 5	5
2-Chloroethylvinylether	110-75-8	<10	10
Bromoform	75-25-2	< 5	5
4-Methyl-2-Pentanone	108-10-1	<10	10
2-Hexanone	591-78-6	<10	10
Tetrachloroethene	127-18-4	< 5	5
1,1,2,2-Tetrachloroethane	79-34-5	< 5	5
Toluene	108-88-3	< 5	5
Chlorobenzene	108-90-7	< 5	5
Ethylbenzene	100-41-4	< 5	5
Styrene	100-42-5	< 5	5
Total Xylenes		< 5	5

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: SW 846 Method 8240

Analyst: D. Luckenbill
Verified: K. Kline
Date Reported: September 26, 1989

Respectfully submitted,

Keith S. Kline

Environmental/Analytical Testing Division

Client: Arvin Industries, Inc.
Client Address: 1531 13th Street
Columbus, IN 47201

Client Sample Identification: B-5, Duplicate
Sample Matrix: Soil
Date Sample Collected: September 21, 1989
Date Sample Received: September 22, 1989
Date Sample Analyzed: September 25, 1989
Processed By: FEB

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

ATEC Lab No. 91755EDUP

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Chloromethane	74-87-3	<10	10
Bromomethane	74-83-9	<10	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<10	10
Methylene Chloride	75-09-2	54	5
Acetone	67-64-1	<10*	10
Carbon Disulfide	75-15-0	< 5	5
1,1-Dichloroethene	75-35-4	< 5	5
1,1-Dichloroethane	75-35-3	< 5	5
Trans-1,2-Dichloroethene	156-60-5	< 5	5
Chloroform	67-66-3	< 5	5
1,2-Dichloroethane	107-06-2	< 5	5
2-Butanone	78-93-3	<10*	10
1,1,1-Trichloroethane	71-55-6	< 5	5
Carbon Tetrachloride	56-23-5	< 5	5
Vinyl Acetate	108-05-4	<10	10
Bromodichloromethane	75-27-4	< 5	5
1,2-Dichloropropane	78-87-5	< 5	5

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. 91755EDUP

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Trans-1, 3-Dichloropropene	10061-02-6	< 5	5
Trichloroethene	79-01-6	< 5	5
Dibromochloromethane	124-48-1	< 5	5
1,1,2-Trichloroethane	79-00-5	< 5	5
Benzene	71-43-2	< 5	5
cis-1,3-Dichloropropene	10061-01-5	< 5	5
2-Chloroethylvinylether	110-75-8	<10	10
Bromoform	75-25-2	< 5	5
4-Methyl-2-Pentanone	108-10-1	<10	10
2-Hexanone	591-78-6	<10	10
Tetrachloroethene	127-18-4	< 5*	5
1,1,2,2-Tetrachloroethane	79-34-5	< 5	5
Toluene	108-88-3	< 5*	5
Chlorobenzene	108-90-7	< 5	5
Ethylbenzene	100-41-4	< 5	5
Styrene	100-42-5	< 5	5
Total Xylenes		< 5	5

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: SW 846 Method 8240

Analyst: D. Luckenbill
Verified: K. Kline
Date Reported: September 26, 1989

Respectfully submitted,

Keith S. Kline

Environmental/Analytical Testing Division

Client: Arvin Industries, Inc.
Client Address: 1531 13th Street
Columbus, IN 47201

Client Sample Identification: Method Blank - Incos
Sample Matrix: Soil
Date Sample Analyzed: September 25, 1989
Processed By: FEB

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

ATEC Lab No. BLANK092589

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Chloromethane	74-87-3	<10	10
Bromomethane	74-83-9	<10	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<10	10
Methylene Chloride	75-09-2	7	5
Acetone	67-64-1	<10	10
Carbon Disulfide	75-15-0	< 5	5
1,1-Dichloroethene	75-35-4	< 5	5
1,1-Dichloroethane	75-35-3	< 5	5
Trans-1,2-Dichloroethene	156-60-5	< 5	5
Chloroform	67-66-3	< 5	5
1,2-Dichloroethane	107-06-2	< 5	5
2-Butanone	78-93-3	<10	10
1,1,1-Trichloroethane	71-55-6	< 5	5
Carbon Tetrachloride	56-23-5	< 5	5
Vinyl Acetate	108-05-4	<10	10
Bromodichloromethane	75-27-4	< 5	5
1,2-Dichloropropane	78-87-5	< 5	5

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. BLANK092589

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Trans-1, 3-Dichloropropene	10061-02-6	< 5	5
Trichloroethene	79-01-6	< 5	5
Dibromochloromethane	124-48-1	< 5	5
1,1,2-Trichloroethane	79-00-5	< 5	5
Benzene	71-43-2	< 5	5
cis-1,3-Dichloropropene	10061-01-5	< 5	5
2-Chloroethylvinylether	110-75-8	<10	10
Bromoform	75-25-2	< 5	5
4-Methyl-2-Pentanone	108-10-1	<10	10
2-Hexanone	591-78-6	<10	10
Tetrachloroethene	127-18-4	< 5	5
1,1,2,2-Tetrachloroethane	79-34-5	< 5	5
Toluene	108-88-3	< 5	5
Chlorobenzene	108-90-7	< 5	5
Ethylbenzene	100-41-4	< 5	5
Styrene	100-42-5	< 5	5
Total Xylenes		< 5	5

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: SW 846 Method 8240

Analyst: M. McGill
Verified: K. Kline
Date Reported: September 26, 1989

Respectfully submitted,

Keith S. Kline

Environmental/Analytical Testing Division

Client: Arvin Industries, Inc.
Client Address: 1531 13th Street
Columbus, IN 47201

Client Sample Identification: Method Blank
Sample Matrix: Soil
Date Sample Analyzed: September 26, 1989
Processed By: FEB

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

ATEC Lab No. BLANK092689

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Chloromethane	74-87-3	<10	10
Bromomethane	74-83-9	<10	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<10	10
Methylene Chloride	75-09-2	15	5
Acetone	67-64-1	<10*	10
Carbon Disulfide	75-15-0	< 5	5
1,1-Dichloroethene	75-35-4	< 5	5
1,1-Dichloroethane	75-35-3	< 5	5
Trans-1,2-Dichloroethene	156-60-5	< 5	5
Chloroform	67-66-3	< 5	5
1,2-Dichloroethane	107-06-2	< 5	5
2-Butanone	78-93-3	<10*	10
1,1,1-Trichloroethane	71-55-6	< 5	5
Carbon Tetrachloride	56-23-5	< 5	5
Vinyl Acetate	108-05-4	<10	10
Bromodichloromethane	75-27-4	< 5	5
1,2-Dichloropropane	78-87-5	< 5	5

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. BLANK092689

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Trans-1, 3-Dichloropropene	10061-02-6	< 5	5
Trichloroethene	79-01-6	< 5	5
Dibromochloromethane	124-48-1	< 5	5
1,1,2-Trichloroethane	79-00-5	< 5	5
Benzene	71-43-2	< 5	5
cis-1,3-Dichloropropene	10061-01-5	< 5	5
2-Chloroethylvinylether	110-75-8	<10	10
Bromoform	75-25-2	< 5	5
4-Methyl-2-Pentanone	108-10-1	<10	10
2-Hexanone	591-78-6	<10	10
Tetrachloroethene	127-18-4	< 5	5
1,1,2,2-Tetrachloroethane	79-34-5	< 5	5
Toluene	108-88-3	< 5	5
Chlorobenzene	108-90-7	< 5	5
Ethylbenzene	100-41-4	< 5	5
Styrene	100-42-5	< 5	5
Total Xylenes		< 5	5

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: SW 846 Method 8240

Analyst: D. Luckenbill
Verified: K. Kline
Date Reported: September 26, 1989

Respectfully submitted,

Keith S. Kline

Environmental/Analytical Testing Division

Client: Arvin Industries, Inc.
Client Address: 1531 13th Street
Columbus, IN 47201

Client Sample Identification: B-4, Duplicate
Sample Matrix: Soil
Date Sample Collected: September 21, 1989
Date Sample Received: September 22, 1989
Date Sample Analyzed: September 25, 1989
Processed By: FEB

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

ATEC Lab No. 91755DDUP

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Chloromethane	74-87-3	<23	23
Bromomethane	74-83-9	<23	23
Vinyl Chloride	75-01-4	<23	23
Chloroethane	75-00-3	<23	23
Methylene Chloride	75-09-2	48	12
Acetone	67-64-1	<23	23
Carbon Disulfide	75-15-0	<12	12
1,1-Dichloroethene	75-35-4	<12	12
1,1-Dichloroethane	75-35-3	<12	12
Trans-1,2-Dichloroethene	156-60-5	<12	12
Chloroform	67-66-3	<12	12
1,2-Dichloroethane	107-06-2	<12	12
2-Butanone	78-93-3	<23	23
1,1,1-Trichloroethane	71-55-6	<12	12
Carbon Tetrachloride	56-23-5	<12	12
Vinyl Acetate	108-05-4	<23	23
Bromodichloromethane	75-27-4	<12	12
1,2-Dichloropropane	78-87-5	<12	12

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. 91755DDUP

Analyte	CAS Number	Concentration (ug/kg)	Quantitation Limit (ug/kg)
Trans-1, 3-Dichloropropene	10061-02-6	<12	12
Trichloroethene	79-01-6	<12	12
Dibromochloromethane	124-48-1	<12	12
1,1,2-Trichloroethane	79-00-5	<12	12
Benzene	71-43-2	<12	12
cis-1,3-Dichloropropene	10061-01-5	<12	12
2-Chloroethylvinylether	110-75-8	<23	23
Bromoform	75-25-2	<12	12
4-Methyl-2-Pentanone	108-10-1	<23	23
2-Hexanone	591-78-6	<23	23
Tetrachloroethene	127-18-4	<12	12
1,1,2,2-Tetrachloroethane	79-34-5	<12	12
Toluene	108-88-3	<12*	12
Chlorobenzene	108-90-7	<12	12
Ethylbenzene	100-41-4	<12	12
Styrene	100-42-5	<12	12
Total Xylenes		<12	12

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: SW 846 Method 8240

Analyst: M. McGill
Verified: K. Kline
Date Reported: September 26, 1989

Respectfully submitted,

Keach S. Kline

Environmental/Analytical Testing Division

CHAIN OF CUSTODY RECORD

ATEC Environmental Services
Division of ATEC Associates, Inc.
5150 East 65th Street
Indianapolis, Indiana 46220-4871
(317) 849-4990, FAX # (317) 849-4278

PROJ. NO. 21-97509 | PROJECT NAME / CLIENT: Arvin Industries | LAB PROJ. NO. 891755

SAMPLERS: (Signature) James Burtt / [signature]

SAMPLING METHOD

LABORATORY ANALYSIS

SAMPLE I.D. NO.	DATE	TIME	COMPOSITE	GRAB	WATER	SOIL	Ceiling Tile	FILTERED	ACIDIFIED	ICED		NUMBER OF CONTAINERS	LAB I.D. NUMBER	VOLATILE ORGANICS	BTX & E	TOTAL HYDROCARBONS	PCB'S	E.P. TOXIC METALS	TOTAL METALS (8)	IGNITABILITY	Asbestos		SAMPLE LOCATION / REMARKS
B-1	9/21/89	PM		✓		✓				✓		1	-1	✓									
B-2	9/21/89	PM		✓		✓				✓		1	-2	✓									
B-3	9/21/89	PM		✓		✓				✓		1	-3	✓									
B-4	9/21/89	PM		✓		✓				✓		1	-4	✓									
B-5	9/21/89	PM		✓		✓				✓		1	-5	✓									
B-6	9/21/89	PM		✓		✓				✓		1	-6	✓									
MW-1	9/22/89	PM		✓	✓					✓		2	-7	✓									
MW-2	9/22/89	PM		✓	✓					✓		2	-8	✓									
MW-3	9/22/89	PM		✓	✓					✓		2	-9	✓									
A-1	9/22/89	PM		✓			✓					1									✓		Sent to A Lab

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
James Burtt	9/22/89 4:30 PM				

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Project Manager / Phone #:
		[signature]	9-22-89 4:30 pm	

ATEC Environmental Consultants
Division of ATEC Associates, Inc.
5150 East 65th Street
Indianapolis, Indiana 46220-4871
(317) 849-4990, FAX # (317) 849-4278

Solid & Hazardous Waste Site Assessments
Remedial Design & Construction
Underground Tank Management
Asbestos Surveys & Analysis
Hydrogeologic Investigations & Monitoring
Analytical Testing / Chemistry
Industrial Hygiene / Hazard Communication
Environmental Audits & Permitting
Exploratory Drilling & Monitoring Wells

DATE: September 29, 1989

CLIENT: ATEC Environmental Consultants
5150 E. 65th Street
Indianapolis, IN 46220

SAMPLE TAKEN BY: Client
DATE RECEIVED: September 26, 1989
DATE ANALYZED: September 29, 1989
PROCESSED BY: SAS
ATEC LAB I.D. BATCH #A-892994

SUBJECT: BULK ASBESTOS ANALYSIS
Subsurface Investigation Airport Expressway

The attached bulk asbestos analysis report is provided for your records. This analysis was completed by ATEC's Analytical Laboratory. The methodology employed to obtain this analysis is Polarized Light Microscopy and Dispersion Staining. It should be noted that samples that contain greater than 1% asbestos should be treated as asbestos containing material.

ATEC Indianapolis and its Sub-Facilities appends its PLM analysis of vinyl tile with the following footnote:

> Analysis of floor tile and other resinously bound materials by EPA Method 600/M4-82-020 December 1982 may yield false negative results because of method limitations in separating closely bound fibers and in detecting fibers of small length and diameter. When analysis of such materials by the EPA Method yields negative results for the presence of asbestos, ATEC Indianapolis and its Sub-Facilities recommend utilizing alternative methods of identification including *Transmission Electron Microscopy*.

Should you have any questions, please contact me at (317) 849-4990.

Sincerely,
ATEC Associates, Inc.

Patrick Stanford

Patrick Stanford
Assistant Asbestos Laboratory Supervisor

ATEC Environmental Consultants
Division of ATEC Associates, Inc.
5150 East 65th Street
Indianapolis, Indiana 46220-4871
(317) 849-4990, FAX # (317) 849-4278

Solid & Hazardous Waste Site Assessments
Remedial Design & Construction
Underground Tank Management
Asbestos Surveys & Analysis
Hydrogeologic Investigations & Monitoring
Analytical Testing / Chemistry
Industrial Hygiene / Hazard Communication
Environmental Audits & Permitting
Exploratory Drilling & Monitoring Wells

ATEC ASSOCIATES, INC.
BULK SAMPLE ANALYSIS REPORT
NVALP Accredited
NVLAP Code Number 1265-00
Polarized Light-Dispersion Staining Method
ATEC Project Number 21-98054

DATE: September 29, 1989

CLIENT: ATEC Environmental Consultants
5150 E. 65th Street
Indianapolis, IN 46220

SAMPLE IDENTIFICATION: Subsurface Investion Airport Expressway
SAMPLE TAKEN BY: Client
DATE RECEIVED: September 26, 1989
DATE ANALYZED: September 29, 1989
PROCESSED BY: SAS
ATEC LAB I.D. BATCH #A-892994

	ASBESTOS CONTENT PERCENT				OTHER FIBROUS MATERIAL PERCENT			
SAMPLE I.D.	CHRYSOTILE	AMOSITE	CROCIDOLITE	OTHER	FIBROUSGLASS	MANMADE	CELLULOSE	OTHER
A-1	ND	ND	ND	ND	15-25	ND	35-45	NOF
M-1	ND	ND	ND	ND	70-80	ND	05-10	NOF
W-1	ND	ND	ND	ND	ND	ND	60-65	NOF

Analytical Instrument: Olympus Polarizing Microscope-BHTP-2
Sample Not Homogenized
NVLAP Bulk Asbestos Identification Quality Assurance Program
Percentages given on visual estimate
Laboratories not responsible for sampling techniques
Test report relates only to items tested
Report can not be used to claim product endorsement

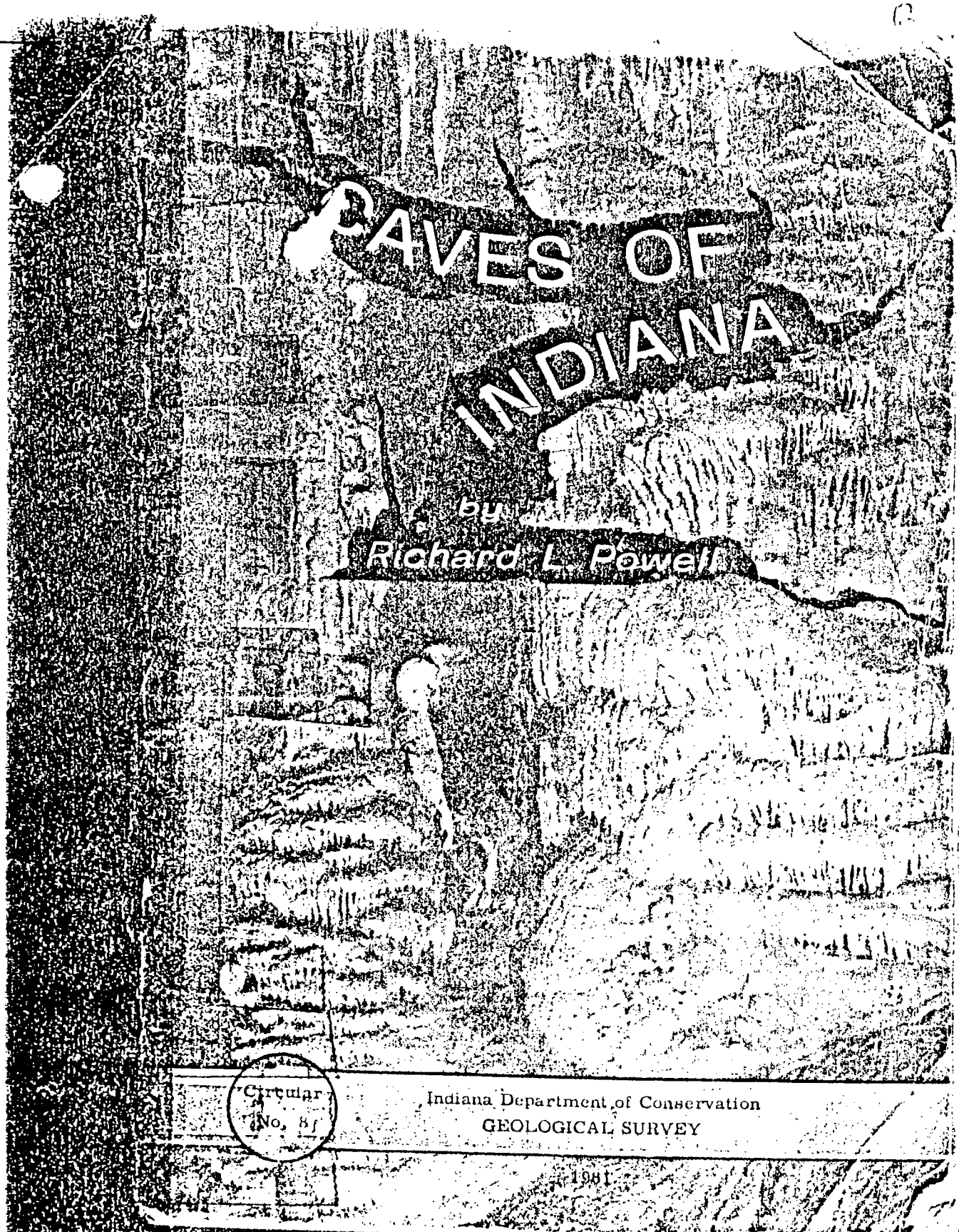
ND - NONE DETECTED
IS - INSUFFICIENT SAMPLE
NOF- NO OTHER FIBERS
HH - HORSE HAIR

ANALYST: Scott P. Lindsay

SIGNATURE: Scott P. Lindsay

Respectfully submitted,
ATEC Associates, Inc.

Robert S. Thompson
Environmental/Analytical Testing Division



Indiana Department of Conservation
GEOLOGICAL SURVEY

1961

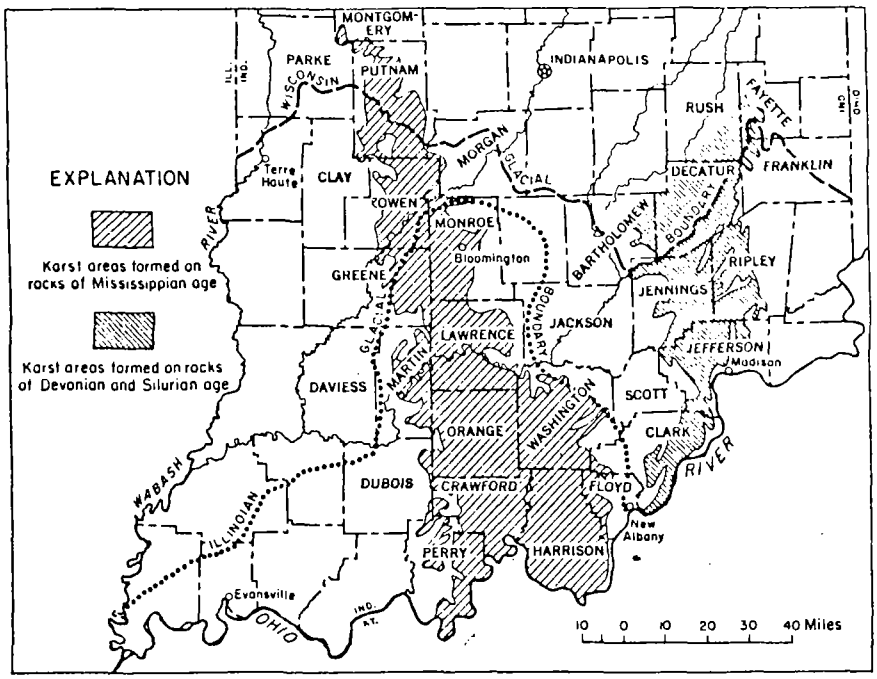


Figure 1.--Map of Indiana showing two major karst areas.

Salem, St. Louis, Ste. Genevieve, and Paoli Limestones (table 1). These limestones are thicker and more susceptible to solution and erosion than the other limestones of Indiana. Underground drainage is so extensive in the Mitchell Plain that few streams flow across the surface of the ground. Karst areas in the Crawford Upland are less extensive and are limited to the eastern part of the upland, which is underlain by the limestones, sandstones, and shales of the Chester Series.

The Crawford Upland is a hilly, roughly dissected upland formed upon upper Mississippian and lower Pennsylvanian shales, sandstones, and limestones. The Beaver Bend, Reelsville, Beech Creek, Golconda, and Glen Dean Limestones crop out in the upland, contain some caverns, and in some places exhibit karst features. Karst valleys, formed in inliers of Paoli and Ste. Genevieve Limestones, are common along the east edge of the upland. Most of Indiana's larger caverns also are associated with the east edge of the Crawford Upland.

The Mitchell Plain and the Crawford Upland are separated by an eastward-facing escarpment called the Chester Escarpment. This escarpment separates the resistant sandstones in the upland and the more easily eroded and dissolved limestones in the plain.

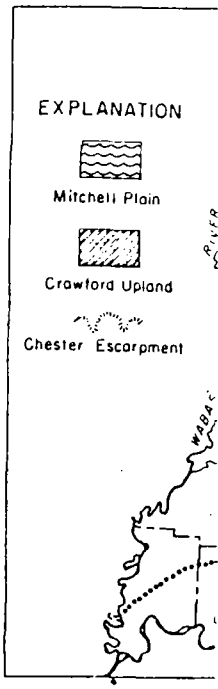


Figure 2.--
Crawfo
Malott,

The limesto
southwest at a ra
of 450 feet in th
p. 190). The low
Limestone, whic
contains a few sn
Salem Limeston
ranges from 20 t
a few of which ar
and Endless Cave
examples. Above
which ranges fro
varying size are
Donaldson's, Tw
Caves. Lost Rive
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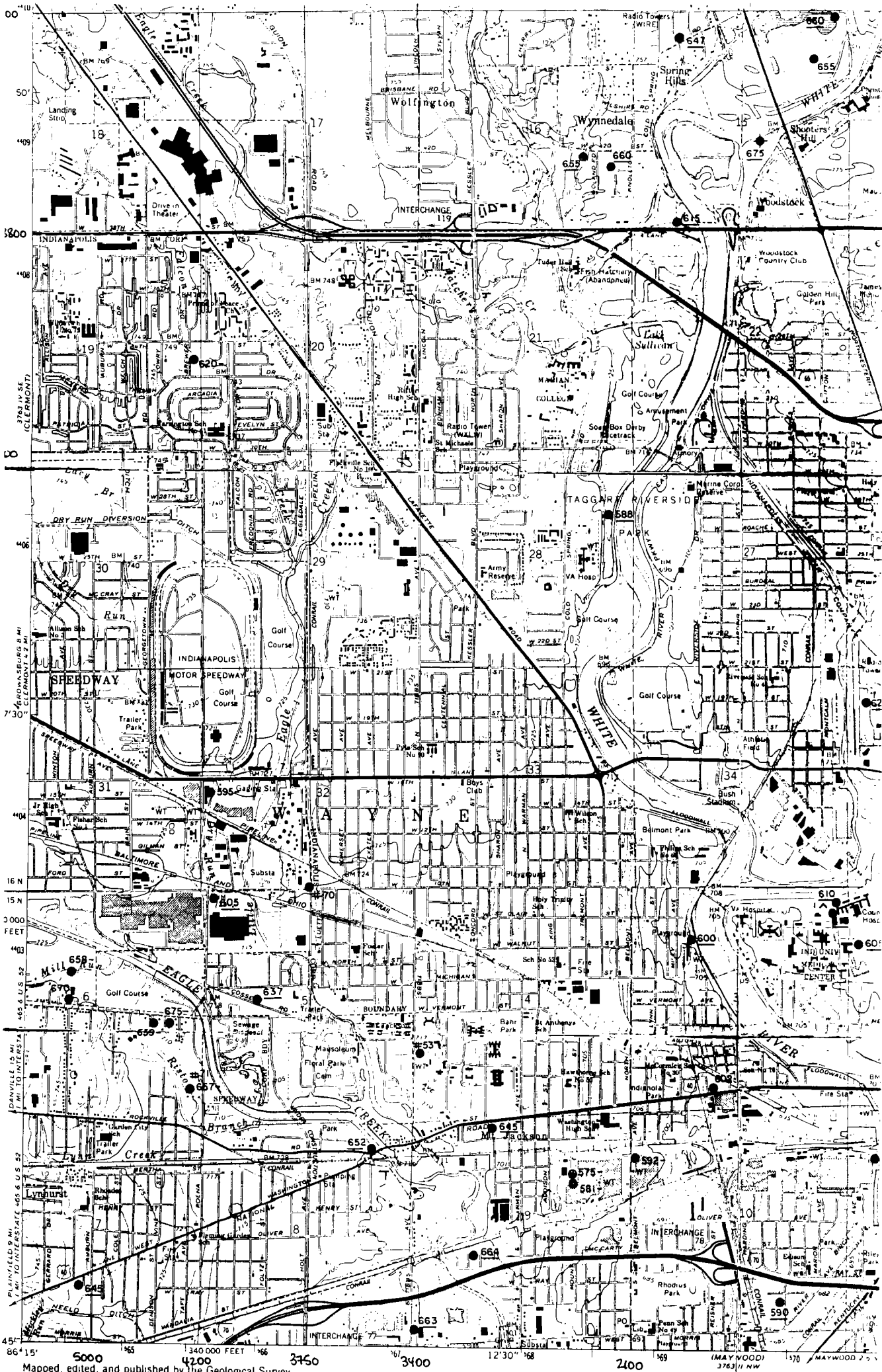
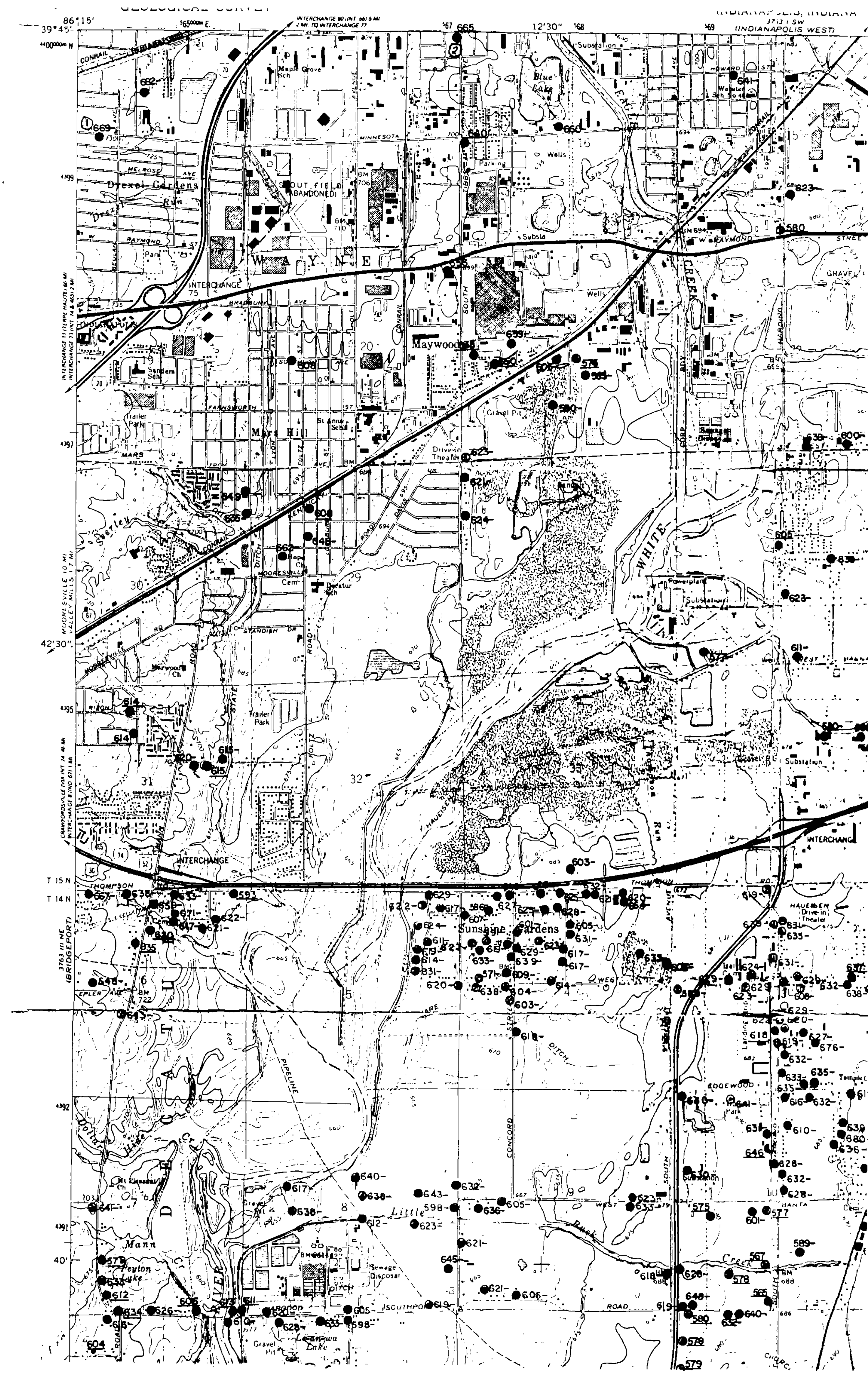

INDIANAPOLIS
SPEEDWAY
INDIANAPOLIS MOTOR SPEEDWAY
WAYNE
TAGGART MEMORIAL
PARK
Wolfington
Wynnedale
Spring Hills
Shooters Hill
Woodstock
Golden Hill Park
Golf Course
Eagle Creek
White River
Little Eagle Creek
Mill Creek
Big Eagle Creek
Lynhurst
Mt. Jackson
Interchange 119
Interchange 75
Interchange 77
Mapped, edited, and published by the Geological Survey
SCALE 1:24000



86°15'
39°45'
INTERCHANGE 80 (INT 465) 5 MI
2 MI. TO INTERCHANGE 77
12'30"
3713 I SW
(INDIANAPOLIS WEST)
Maple Grove Sch
MINNESOTA
Blue Lake
Webster Sch
HOWARD ST
Drexel Gardens
MELROSE AVE
RAYMOND ST
W RAYMOND
W A Y N E
INTERCHANGE 75
BRADBURY AVE
Wells
Substation
Maywood
Sanders Sch
FARNSWORTH
Trailer Park
Mars Hill
St Anne Sch
Gravel Pit
Drive-in Theater
Hope Ch
Cem
Decatur Sch
MOORESVILLE
STANDISH DR
WHITE
Powerplant
Substation
42'30"
Maywood Ch
Trailer Park
INTERCHANGE
THOMPSON
T 15 N
T 14 N
3763 III NE
(BRIDGEPORT)
Sunshine Gardens
KEPLER AVE
CONCORD
PIPELINE
DITCH
EDGEWOOD
Hauenstein Drive-in Theater
Little
Creek
Mann
Peyton Lake
Sewage Disposal
SOUTHPORT
ROAD
Gravel Pit
Lake
Mt Pleasant Ch
40'

DIVISION OF WATER
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA
STATE OFFICE BUILDING
INDIANAPOLIS, INDIANA 46209

WATER WELL RECORD

Non Responsive

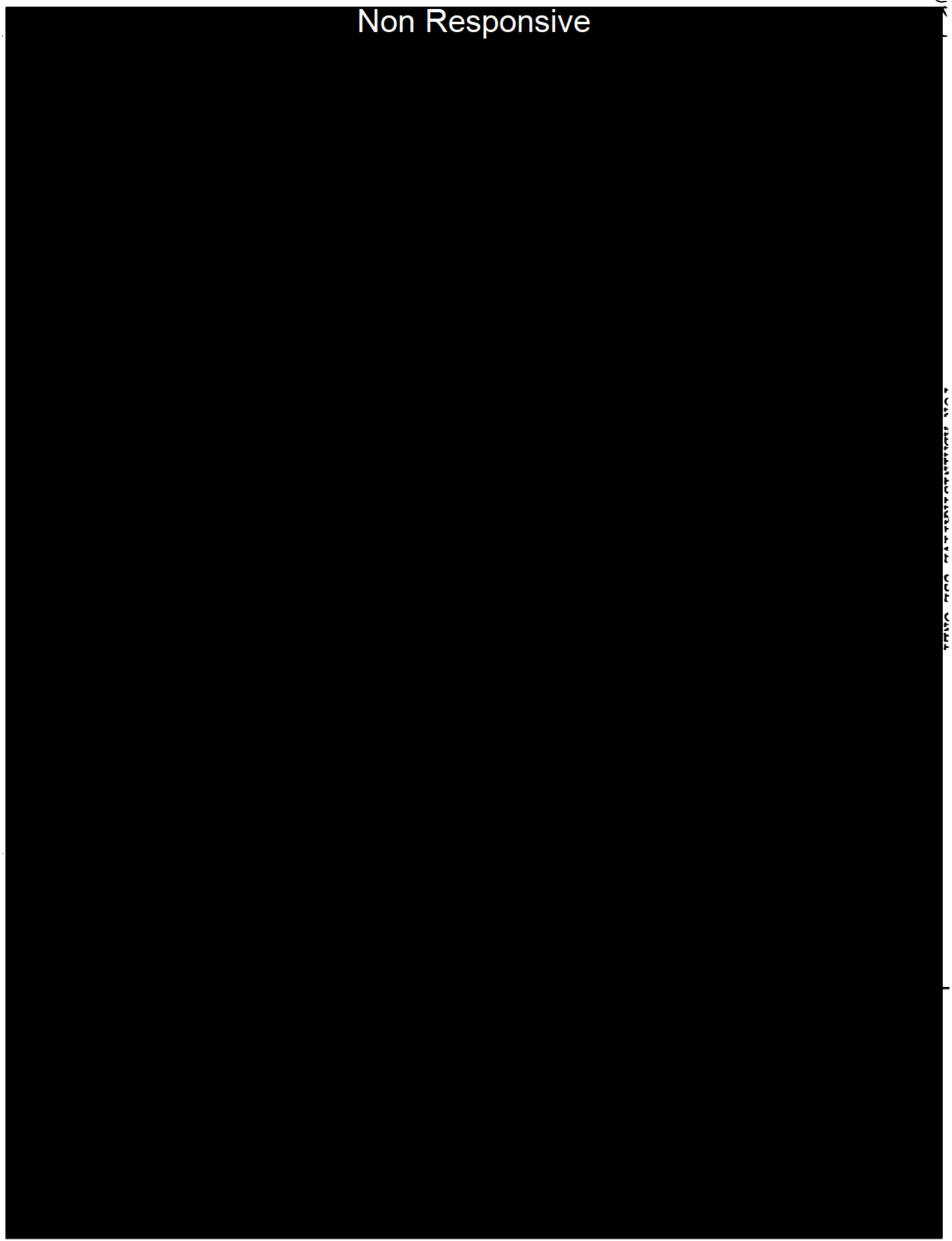
Non Responsive

DIVISION OF WATER
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA
STATE OFFICE BUILDING
INDIANAPOLIS, INDIANA 46209
MElrose 3–6757

Locate!

WATER WELL RECORD

Non Responsive


Non Responsive

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DIVISION OF WATER RESOURCES
INDIANA DEPARTMENT OF CONSERVATION
311 WEST WASHINGTON STREET
INDIANAPOLIS, INDIANA

WATER WELL RECORD

Non Responsive

Non Responsive

WATER WELL RECORD

State Form 35680R2

Mail completed record within 30 days to:
DIVISION OF WATER
INDIANA DEPARTMENT OF NATURAL RESOURCES
2475 DIRECTORS ROW
INDIANAPOLIS, INDIANA 46241
PHONE (317) 232-4160

Non Responsive

Non Responsive

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DIVISION OF WATER RESOURCES
INDIANA DEPARTMENT OF CONSERVATION
311 WEST WASHINGTON STREET
INDIANAPOLIS, INDIANA

WATER WELL RECORD

Non Responsive

Non Responsive

Attachment A

Average household = 2.42 people/household

0-¼ Mile → 10 people - 4 houses

¼-½ Mile → 180 people - assume 50 houses in Mars Hill residential area and 25 houses in Drexel Gardens

½-1 Mile → 666 people - assume 175 houses in the Mars Hill residential area and 100 houses in Drexel Gardens

1-2 Miles → 726 people - assume 300 houses in the Mars Hill residential area

2-3 Miles → 0 people

3-4 Miles → 26,000 people - the Speedway Municipal wells supply ≈26,000 people

Attachment B

Average household = 2.42 people/household

0-¼ Mile → assume 30 houses west of site

¼-½ Mile → assume 120 houses northwest and southeast of site

½-1 Mile → assume 250 houses northwest and southeast of site

1-2 Miles → assume 17,000 people (2% of the population of Indianapolis)

2-3 Miles → assume 35,000 people (4% of the population of Indianapolis)

3-4 Miles → assume 67,000 people (8% of the population of Indianapolis)

Table 5. Household, Family, and Group Quarters Characteristics: 1990—Con.

[For definitions of terms and meanings of symbols, see text]

State County City Subdivision Place	Persons in households	All households	Family households			Nonfamily households				Persons per—		Persons in group quarters		
							Householder living alone							
								65 years and over						
			Total	Married-couple family	Female householder, no husband present	Total	Total	Total	Female	Household	Family	Total	Institutionalized persons	Other persons in group quarters
La Porte County—Con.														
Coolspring township	14 232	5 517	3 943	3 225	592	1 574	1 366	534	427	2.58	3.11	260	256	4
Michigan City city (pt.)	6 756	2 924	1 814	1 325	422	1 110	973	368	302	2.31	2.98	256	256	-
Trail Creek town (pt.)	1 073	410	316	279	28	94	87	35	32	2.62	3.04	-	-	-
Dewey township	1 179	413	331	296	24	82	68	40	29	2.85	3.22	-	-	-
La Crosse town	677	237	187	165	15	50	43	27	21	2.86	3.27	-	-	-
Galena township	1 543	546	441	407	23	105	87	57	43	2.83	3.18	-	-	-
Hanna township	930	319	261	235	17	58	53	26	22	2.92	3.29	-	-	-
Hudson township	2 151	800	592	507	54	208	176	72	49	2.69	3.14	-	-	-
Johnson township	229	80	69	59	8	11	7	3	3	2.86	3.06	-	-	-
Kankakee township	3 361	1 232	955	822	97	277	244	112	87	2.73	3.14	-	-	-
La Porte city (pt.)	1 013	402	279	231	37	123	108	38	28	2.52	3.07	-	-	-
Lincoln township	1 862	668	546	486	37	122	106	55	45	2.79	3.10	-	-	-
Michigan township	29 182	11 356	7 799	5 708	1 671	3 557	3 034	1 321	1 022	2.57	3.13	2 014	1 989	25
Long Beach town	2 044	808	628	564	48	180	155	81	62	2.53	2.91	-	-	-
Michiana Shores town (pt.)	255	106	73	64	4	33	26	11	8	2.41	2.90	-	-	-
Michigan City city (pt.)	24 796	9 638	6 461	4 499	1 575	3 177	2 702	1 145	886	2.57	3.17	2 014	1 989	25
Pottawattomie Park town	281	106	88	79	7	18	15	9	7	2.65	2.86	-	-	-
Trail Creek town (pt.)	1 390	552	431	396	27	121	111	63	52	2.52	2.90	-	-	-
New Durham township	3 521	1 346	1 005	843	113	341	284	106	78	2.62	3.06	3 174	3 174	-
Westville town	2 081	829	589	476	81	240	196	64	53	2.51	2.99	3 174	3 174	-
Noble township	1 333	477	369	321	36	108	98	67	49	2.79	3.27	-	-	-
Pleasant township	2 897	1 018	832	675	133	186	162	72	58	2.85	3.19	-	-	-
La Porte city (pt.)	1 131	435	337	233	95	98	88	39	32	2.60	2.99	-	-	-
Prairie township	224	74	61	56	2	13	13	7	5	3.03	3.44	-	-	-
Scipio township	3 285	1 254	990	893	72	264	246	93	74	2.62	3.01	205	205	-
La Porte city (pt.)	1 134	478	333	297	28	145	134	49	43	2.37	2.93	161	161	-
Springfield township	4 584	1 660	1 319	1 115	142	341	271	95	74	2.76	3.10	16	-	16
Michiana Shores town (pt.)	123	59	34	27	5	25	22	8	6	2.08	2.76	-	-	-
Union township	2 505	826	658	507	113	168	139	58	46	3.03	3.41	-	-	-
Kingsford Heights town	1 486	476	381	266	88	95	80	32	26	3.12	3.48	-	-	-
Washington township	926	310	262	235	16	48	42	19	13	2.99	3.28	-	-	-
Kingsbury town	258	92	72	56	14	20	17	10	7	2.80	3.18	-	-	-
Wills township	1 291	443	365	313	36	78	66	38	30	2.91	3.25	-	-	-
Lawrence County	42 155	16 235	12 171	10 409	1 355	4 064	3 654	1 913	1 547	2.60	3.05	681	617	64
Bono township	668	234	192	173	10	42	36	23	16	2.85	3.20	-	-	-
Guthrie township	1 358	484	398	359	24	86	79	44	31	2.81	3.16	-	-	-
Indian Creek township	2 528	870	742	673	48	128	118	48	40	2.91	3.19	-	-	-
Oolitic town (pt.)	6	1	1	1	-	-	-	-	-	6.00	6.00	-	-	-
Marion township	8 798	3 334	2 520	2 131	301	814	724	369	294	2.64	3.08	185	160	25
Mitchell city	4 484	1 781	1 245	981	216	536	483	257	209	2.52	3.05	185	160	25
Marshall township	3 800	1 372	1 109	998	81	263	239	105	75	2.77	3.13	-	-	-
Perry township	1 726	586	488	443	33	98	73	30	27	2.95	3.25	-	-	-
Pleasant Run township	1 649	589	481	422	47	108	100	41	27	2.80	3.12	-	-	-
Shawswick township	19 640	8 023	5 656	4 679	777	2 367	2 139	1 174	979	2.45	2.97	496	457	39
Bedford city	13 321	5 757	3 799	3 051	605	1 958	1 774	1 021	867	2.31	2.89	496	457	39
Oolitic town (pt.)	1 418	560	420	340	61	140	136	56	41	2.53	3.00	-	-	-
Spice Valley township	1 988	743	585	531	34	158	146	79	58	2.68	3.08	-	-	-
Madison County	125 486	49 804	35 804	28 617	5 688	14 000	12 385	5 843	4 798	2.52	3.01	5 183	4 048	1 135
Adams township	3 688	1 347	1 099	961	99	248	224	118	86	2.74	3.07	-	-	-
Anderson city (pt.)	2	1	1	1	-	-	-	-	-	2.00	2.00	-	-	-
Markleville town	412	150	119	106	12	31	30	20	13	2.75	3.15	-	-	-
Anderson township	57 928	24 474	16 041	11 842	3 406	8 433	7 460	3 513	2 892	2.37	2.95	1 964	846	1 118
Anderson city (pt.)	55 634	23 517	15 295	11 156	3 357	8 222	7 266	3 381	2 789	2.37	2.95	1 964	846	1 118
Country Club Heights town	112	39	31	29	1	8	6	6	3	2.87	3.29	-	-	-
Edgewood town	2 057	866	676	623	43	190	177	118	94	2.38	2.73	-	-	-
River Forest town	16	8	6	6	-	2	2	1	1	2.00	2.33	-	-	-
Woodlawn Heights town	109	44	33	28	5	11	9	7	5	2.48	2.88	-	-	-
Boone township	681	243	202	191	7	41	37	13	7	2.80	3.13	-	-	-
Duck Creek township	547	199	156	140	8	43	39	18	12	2.75	3.17	-	-	-
Elwood city (pt.)	6	2	2	1	-	-	-	-	-	3.00	3.00	-	-	-
Fall Creek township	9 239	3 410	2 715	2 355	274	695	616	280	218	2.71	3.08	2 815	2 815	-
Pendleton town	2 191	905	604	473	110	301	278	149	125	2.42	3.03	118	118	-
Green township	2 863	1 017	836	724	76	181	153	53	39	2.82	3.12	-	-	-
Ingalls town	889	324	250	202	35	74	64	30	22	2.74	3.14	-	-	-
Jackson township	1 910	681	564	503	42	117	104	45	37	2.80	3.13	-	-	-
Lafayette township	5 408	2 069	1 610	1 324	224	459	403	171	145	2.61	2.98	-	-	-
Anderson city (pt.)	1 339	592	386	283	79	206	182	78	68	2.26	2.80	-	-	-
Frankton town (pt.)	413	149	119	102	14	30	30	14	14	2.77	3.19	-	-	-
Monroe township	9 942	3 742	2 797	2 275	406	945	824	388	329	2.66	3.11	115	101	
Alexandria city	5 610	2 210	1 556	1 203	291	654	578	281	246	2.54	3.06	99	85	
Orestes town	458	152	116	94	18	36	28	15	14	3.01	3.48	-	-	
Pipe Creek township	13 623	5 275	3 875	3 161	558	1 400	1 260	688	575	2.58	3.05	172	172	
Elwood city (pt.)	9 312	3 614	2 576	2 028	435	1 038	931	494	419	2.58	3.10	172	172	
Frankton town (pt.)	1 323	496	395	330	47	101	93	59	45	2.67	3.01	-	-	
Richland township	5 494	1 986	1 679	1 504	133	307	259	97	80	2.77	3.02	-	-	
Anderson city (pt.)	461	179	133	107	19	46	37	9	8	2.58	2.94	-	-	
Stony Creek township	3 588	1 352	1 047	914	102	305	275	143	117	2.65	3.07	-	-	
Lapel town	1 742	671	495	407	73	176	162	79	66	2.60	3.10	-	-	
Union township	8 673	3 295	2 626	2 239	304	669	585	225	183	2.63	2.98	117	114	
Anderson city (pt.)	59	22	17	16	1	5	5	2	2	2.68	3.18	-	-	
Chesterfield town (pt.)	2 666	1 110	784	602	150	326	287	106	84	2.40	2.87	55	55	
Van Buren township	1 902	714	557	484	49	157	146	91	78	2.66	3.07	-	-	
Summitville town	1 010	385	289	240	31	96	90	59	52	2.62	3.09	-	-	
Marion County	782 830	319 471	205 652	150 965	44 232	113 819	93 696	29 430	23 529	2.45	3.06	14 329	9 725	
Center township	177 355	70 266	42 562	24 820	14 480	27 704	23 139	8 205	6 094	2.52	3.25	4 785	3 568	
Beech Grove city (pt.)	3 203	1 287	950	777	136	337	288	143	112	2.49	2.91	240	240	
Indianapolis city (remainder) (pt.)	174 152	68 979	41 612	24 043	14 344	27 367	22 851	8 062	5 982	2.52	3.26	4 545	3 328	
Decatur township	20 966	7 312	5 941	4 769	892	1 371	1 108	385	305	2.87	3.18	126	126	
Indianapolis city (remainder) (pt.)	20 966	7 312	5 941	4 769	892	1 371	1 108	385	305	2.87	3.18	126	126	
Franklin township	21 458	7 370	6 075	5 303	590	1 295	1 076	389	339	2.91	3.24	-	-	
Beech Grove city (pt.)	854	425	206	146	47	219	205	137	132	2.01	2.93	-	-	
Indianapolis city (remainder) (pt.)	20 604	6 945	5 869	5 157	543	1 076	871	252	207	2.97	3.25	-	-	
Lawrence township	93 689	36 880	25 555	19 682	4 792	11 325	9 217	1 939	1 565	2.54	3.07	859	590	
Castleton town	37	24	9	5	2	15	13	1	1	1.54	2.00	-	-	
Indianapolis city (remainder) (pt.)	67 401	26 244	18 289	14 022	3 516	7 955	6 488	1 190	986	2.57	3.10	347	347	
Lawrence city	26 251	10 612	7 257	5 655	1 274	3 355	2 716	748	578	2.47	3.00	512	243	

Table 5. Household, Family, and Group Quarters Characteristics: 1990—Con.

[For definitions of terms and meanings of symbols, see text]

State County County Subdivision Place	Persons in households	All households	Family households			Nonfamily households				Persons per—		Persons in group quarters		
							Householder living alone							
								65 years and over						
			Total	Married-couple family	Female householder, no husband present	Total	Total	Total	Female	Household	Family	Total	Institutionalized persons	Other persons in group quarters
Marion County—Con.														
Perry township	83 634	33 764	23 324	18 954	3 447	10 440	8 662	3 341	2 799	2 48	3.00	1 426	718	708
Beech Grove city (pt.)	9 086	3 776	2 537	1 989	432	1 239	1 039	430	372	2 41	2.95	–	–	–
Homecroft town	758	303	242	211	23	61	56	38	31	2 50	2.83	–	–	–
Indianapolis city (remainder) (pt.)	71 821	28 955	19 970	16 266	2 918	8 985	7 438	2 825	2 357	2 48	3 01	1 426	718	708
Southport city	1 969	730	575	488	74	155	129	48	39	2 70	3 07	–	–	–
Pike township	44 819	20 322	11 545	9 066	2 049	8 777	7 090	1 380	1 182	2.21	2 91	385	366	19
Clermont town (pt.)	454	152	139	134	3	13	9	3	2	2.99	3.13	–	–	–
Indianapolis city (remainder) (pt.)	44 365	20 170	11 406	8 932	2 046	8 764	7 081	1 377	1 180	2.20	2.91	385	366	19
Warren township	86 483	34 609	23 894	18 102	4 733	10 715	9 078	3 407	2 821	2.50	3.03	1 506	1 423	83
Beech Grove city (pt.)	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Cumberland town (pt.)	2 933	1 084	763	502	227	321	277	77	63	2.71	3 28	–	–	–
Indianapolis city (remainder) (pt.)	81 856	32 556	22 731	17 279	4 440	9 825	8 253	2 869	2 346	2 51	3 02	1 437	1 354	83
Warren Park town	1 694	969	400	321	66	569	548	461	412	1.75	2.73	69	69	–
Washington township	130 826	57 965	34 415	26 428	6 582	23 550	19 309	5 800	4 771	2.26	2.93	3 143	1 355	1 788
Crows Nest town	114	40	34	31	2	6	6	4	3	2.85	3 18	–	–	–
Indianapolis city (remainder) (pt.)	127 370	56 623	33 373	25 501	6 492	23 250	19 050	5 675	4 667	2.25	2 92	3 143	1 355	1 788
Meridian Hills town	1 728	653	533	486	35	120	112	69	58	2.65	2.98	–	–	–
North Crows Nest town	57	18	18	16	2	–	–	–	–	3.17	3.17	–	–	–
Rocky Ripple town	751	323	199	149	38	124	100	33	27	2.33	2.96	–	–	–
Spring Hill town	112	55	35	35	–	20	15	4	3	2.04	2 43	–	–	–
Williams Creek town	425	156	137	129	8	19	19	10	9	2.72	2.94	–	–	–
Wynnedale town	269	97	86	81	5	11	7	5	4	2.77	2.91	–	–	–
Wayne township	123 600	50 983	32 341	23 841	6 667	18 642	15 017	4 584	3 653	2.42	3.03	2 099	1 579	520
Clermont town (pt.)	1 224	477	360	293	50	117	94	34	27	2.57	2.95	–	–	–
Indianapolis city (remainder) (pt.)	109 284	44 162	28 426	20 786	5 966	15 736	12 586	3 617	2 867	2.47	3.07	2 099	1 579	520
Speedway town	13 092	6 344	3 555	2 762	651	2 789	2 337	933	759	2.06	2.70	–	–	–
Marshall County	41 530	15 146	11 508	9 945	1 137	3 638	3 185	1 565	1 237	2.74	3.20	652	494	158
Bourbon township	2 976	1 060	809	711	81	251	217	114	101	2.81	3.26	–	–	–
Bourbon town	1 672	635	454	380	63	181	161	82	74	2.63	3.17	–	–	–
Center township	12 147	4 592	3 279	2 714	443	1 313	1 144	530	432	2 65	3 18	354	354	–
Plymouth city	7 979	3 194	2 090	1 613	384	1 104	967	459	383	2.50	3.14	324	324	–
German township	8 348	2 945	2 269	1 985	195	676	612	333	274	2 83	3.31	79	79	–
Bremen town	4 646	1 770	1 282	1 087	142	488	449	266	225	2.62	3 17	79	79	–
Green township	970	332	279	251	21	53	46	24	19	2.92	3.19	–	–	–
Argos town (pt.)	31	10	9	9	–	1	1	1	1	3.10	3.33	–	–	–
North township	4 088	1 456	1 146	1 021	86	310	256	127	79	2.81	3.19	–	–	–
La Paz town	562	214	150	133	14	64	56	28	16	2 63	3 21	–	–	–
Polk township	2 497	887	721	641	48	166	147	78	56	2.82	3.14	–	–	–
Koontz Lake CDP (pt.)	165	68	41	36	4	27	24	20	13	2.43	3 07	–	–	–
Tippecanoe township	1 188	412	336	303	18	76	69	32	23	2.88	3.23	–	–	–
Union township	3 211	1 289	935	800	91	354	314	147	124	2.49	2 97	78	61	17
Culver town	1 404	589	404	324	57	185	169	86	73	2.38	2.93	–	–	–
Walnut township	2 648	940	730	604	99	210	178	100	76	2 82	3.23	12	–	12
Argos town (pt.)	1 611	569	439	356	66	130	108	60	51	2 83	3.26	–	–	–
West township	3 457	1 233	1 004	915	55	229	202	80	53	2.80	3.14	129	–	129
Martin County	10 113	3 836	2 840	2 430	303	996	916	469	364	2.64	3.14	256	81	175
Center township	1 813	718	508	441	48	210	194	113	93	2.53	3.07	7	7	–
Shoals town (pt.)	523	254	139	117	19	115	105	74	65	2.06	2.79	7	7	–
Halbert township	1 587	594	453	376	56	141	128	66	47	2.67	3.11	–	–	–
Shoals town (pt.)	323	142	92	59	31	50	46	26	22	2.27	2.88	–	–	–
Lost River township	449	168	135	122	7	33	30	18	11	2.67	3 04	–	–	–
Mitcheltree township	539	191	142	118	20	49	41	22	13	2.82	3.30	167	–	167
Perry township	5 044	1 933	1 401	1 194	159	532	493	234	188	2 61	3.15	82	74	8
Crane town	216	90	57	51	4	33	32	9	7	2.40	3 18	–	–	–
Loogootee city	2 846	1 181	790	635	127	391	357	191	154	2.41	3.02	38	38	–
Rutherford township	681	232	201	179	13	31	30	16	12	2.94	3.17	–	–	–
Miami County	36 070	13 484	10 284	8 763	1 153	3 200	2 863	1 342	1 114	2.68	3.11	827	256	571
Allen township	697	244	200	179	10	44	39	20	14	2.86	3 20	–	–	–
Macy town	218	79	64	57	5	15	15	5	2	2.76	3.14	–	–	–
Butler township	790	292	225	205	12	67	56	27	23	2.71	3.11	1	–	1
Clay township	847	303	250	228	14	53	51	22	18	2 80	3.14	–	–	–
Deer Creek township	1 656	610	489	432	39	121	98	39	31	2.71	3.06	–	–	–
Grissom AFB CDP (pt.)	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Erie township	451	167	137	126	7	30	28	14	10	2 70	3 04	–	–	–
Harrison township	748	245	217	200	11	28	27	15	10	3 05	3.30	–	–	–
Jackson township	2 021	753	596	514	63	157	145	76	63	2.68	3.07	–	–	–
Amboy town	370	140	114	97	15	26	25	17	16	2.64	3.00	–	–	–
Converse town (pt.)	965	367	270	227	34	97	88	40	31	2.63	3 13	–	–	–
Jefferson township	2 630	949	757	674	56	192	173	96	73	2.77	3 15	–	–	–
Denver town	504	180	139	120	13	41	40	25	20	2.80	3.27	–	–	–
Mexico CDP	1 003	381	290	257	24	91	82	43	36	2.63	3 08	–	–	–
Perry township	836	275	233	209	15	42	38	19	14	3 04	3 33	–	–	–
Peru township	12 465	5 074	3 450	2 725	583	1 624	1 450	699	601	2 46	3 02	265	255	10
Peru city (pt.)	10 303	4 238	2 820	2 196	503	1 418	1 275	630	550	2 43	3 03	255	255	–
Pipe Creek township	7 513	2 501	2 175	1 981	139	326	291	103	84	3.00	3 25	561	1	560
Bunker Hill town	1 010	391	298	243	45	93	83	25	21	2.58	2.99	–	–	–
Grissom AFB CDP (pt.)	3 710	1 057	1 040	997	21	17	16	–	–	3.51	3.53	561	1	560
Richland township	1 000	352	288	264	10	64	56	38	27	2 84	3.19	–	–	–
Union township	813	272	227	201	17	45	39	21	16	2.99	3 34	–	–	–
Washington township	3 603	1 447	1 040	825	177	407	372	153	130	2 49	3.00	–	–	–
Peru city (pt.)	2 285	975	642	465	152	333	305	118	104	2 34	2.96	–	–	–
Monroe County	93 866	39 351	22 953	18 753	3 270	16 398	11 216	2 822	2 305	2.39	2.93	15 112	778	14 334
Bean Blossom township	2 358	818	677	579	66	141	108	44	27	2.88	3.14	–	–	–
Stinesville town	204	76	58	46	11	18	14	9	7	2 68	3 07	–	–	–
Benton township	3 116	1 180	921	818	76	259	209	63	48	2.64	3.01	–	–	–
Bloomington township	28 560	12 803	5 577	4 424	898	7 226	4 432	877	725	2.23	2 84	13 596	226	13 370
Bloomington city (pt.)	22 534	10 309	3 910	3 034	682	6 399	3 768	604	505	2 19	2 80	13 500	131	13 369
Clear Creek township	3 883	1 496	1 111	972	104	385	306	81	58	2.60	3.02	–	–	–
Indian Creek township	1 429	503	418	367	38	85	68	17	10	2 84	3 11	–	–	–
Perry township	30 748	13 597	7 458	5 901	1 254	6 139	4 328	1 194	987	2.26	2 85	1 237	305	932
Bloomington city (pt.)	20 956	9 605	4 655	3 544	910	4 950	3 354	837	707	2 18	2 80	1 125	193	932
Polk township	331	131	100	88	6	31	29	18	11	2.53	2.93	1	–	1
Richland township	10 093	3 704	2 884	2 436	341	820	677	246	212	2.72	3 11	63	63	–
Bloomington city (pt.)	52	24	18	17	1	6	6	3	3	2 17	2 56	–	–	–
Ellettsville town	3 212	1 186	887	700	157	299	258	128	117	2 71	3 17	63	63	–
Salt Creek township	1 315	526	387	342	25	139	105	21	15	2.50	2.87	1	–	1

TELEPHONE CALL REPORT

Non Responsive

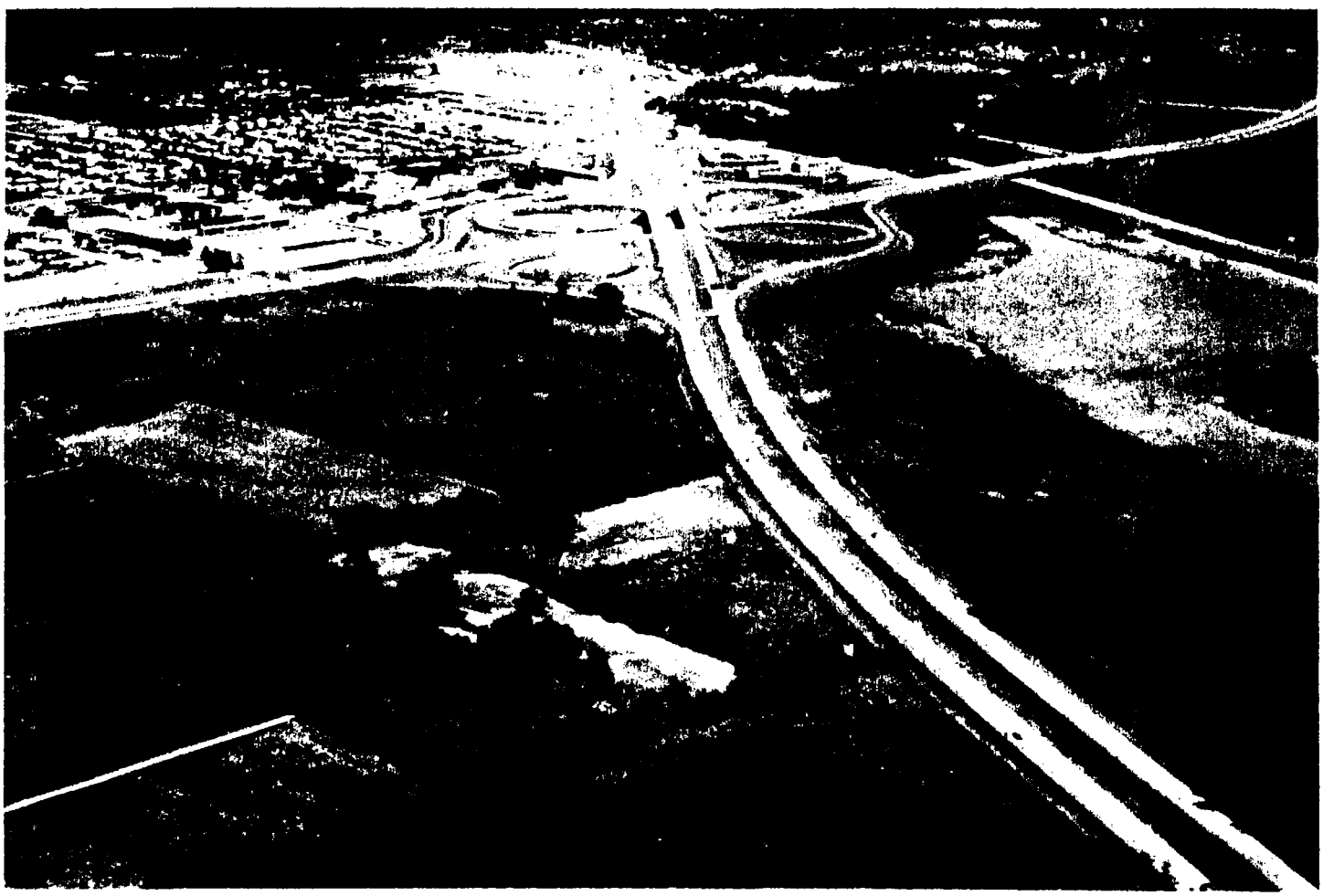
(3)

TELEPHONE CALL REPORT

Non Responsive

SOIL SURVEY OF

Marion County, Indiana



United States Department of Agriculture
Soil Conservation Service
In cooperation with
Purdue University Agricultural Experiment Station

Sloan Series

The Sloan series consists of deep, nearly level, very poorly drained soils on bottom land along the White River and the larger creeks. These soils formed in loamy alluvium. The native vegetation is water tolerant grasses and hardwoods.

In a representative profile, the surface layer is 14 inches thick. The upper 8 inches is very dark gray, heavy silt loam, and the lower 6 inches is very dark grayish brown silty clay loam. The subsoil is about 19 inches thick. The upper 7 inches is mottled very dark gray, firm silty loam, and the lower 12 inches is mottled gray, firm clay loam. The underlying material to a depth of about 45 inches is mottled gray heavy silt loam. Below this to a depth of 60 inches is gray, stratified gravelly loamy sand, loamy sand, and sand.

Permeability is moderate. Available water capacity is high. Organic-matter content of the surface layer is high. The seasonal high water table is at the surface or ½ foot below the surface during some part of the year.

If adequately drained, Sloan soils are well suited to farming. Because of wetness and flooding, they have severe limitations for most nonfarm uses.

Representative profile of Sloan silt loam in a cultivated field 2,640 feet east and 500 feet south of the northwest corner of sec. 9, T. 14 N., R. 3 E.

Ap—0 to 8 inches; very dark gray (10YR 3/1) heavy silt loam; moderate medium granular structure; friable; few fine roots; neutral; abrupt smooth boundary.

A12—8 to 14 inches; very dark grayish brown (2.5Y 3/2) silty clay loam; common medium distinct brown (7.5YR 4/4) mottles; weak medium subangular blocky structure; firm; few fine roots; neutral; gradual wavy boundary.

B21g—14 to 21 inches; very dark gray (10YR 3/1) silty clay loam; few fine prominent brown (7.5YR 4/4) mottles; moderate medium subangular blocky structure; firm; neutral; gradual wavy boundary.

B22t—21 to 28 inches; gray (10YR 5/1) clay loam; many medium prominent yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; firm; fine very dark grayish brown (10YR 3/2) iron and manganese oxide concretions; neutral; clear smooth boundary.

B3g—28 to 33 inches; gray (10YR 5/1) clay loam; many coarse prominent yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; firm; neutral; clear smooth boundary.

C1g—33 to 45 inches; gray (10YR 5/1) heavy silt loam; few fine faint grayish brown (10YR 5/2) mottles; weak medium subangular blocky structure; firm; moderately alkaline; gradual wavy boundary.

IIC2g—45 to 60 inches; gray (10YR 6/1) stratified gravelly loamy sand, loamy sand, and sand; single grained; loose; strong effervescence; moderately alkaline.

The solum is typically 25 to 45 inches thick, but ranges from 20 to 50 inches. Reaction is neutral to moderately alkaline.

The Ap horizon, A1 horizon, or A12 horizon is black (10YR 2/1), very dark brown (10YR 2/2), very dark gray (10YR 3/1) silt loam, heavy silt loam, silty clay loam, or clay loam.

The B horizon is very dark gray (10YR 3/1), dark gray (10YR 4/1), or gray (10YR 5/1) clay loam, silty clay loam, or loam. It has weak or moderate fine to coarse subangular or angular blocky structure. Mottles are few to many, fine to coarse, and faint to prominent.

The upper part of the C horizon has weak or medium or coarse subangular blocky structure or structure. Mottles are few to many, fine to coarse, to prominent.

Sloan soils are in the same landscape as wel Genesee soils, moderately well drained Eel soils, a what poorly drained Shoals soils. Sloan soils poorly drained. They have a darker surface la Genesee, Eel, and Shoals soils. They are mottled inches of the surface, whereas mottles are at a grea in Eel and Shoals soils.

Sn—Sloan silt loam. This nearly level soil i broad bottom land along the White River; narrower bottom land along some creeks; in lo of both the broad bottom land along the river narrower bottom land along the creeks; and in of the river and creeks. Areas range from 2 to 5 in size; the largest are on the broad bottom la the White River. Most areas are irregularly but those in low swales are long or irregularly and those in old oxbows are half moon shape are 0 to 2 percent.

Included with this soil in mapping are sm of somewhat poorly drained Shoals soils a poorly drained Rensselaer soils. Also inclu small areas of muck, which occur where th soil is lowest lying. The muck, which dries c slowly than Sloan soils, is indicated by spot on the soil map.

Runoff is very slow. Wetness and flooding main limitations. This soil is subject to flood ing winter and early in spring and to floodin parts of the growing season. Because of wet flooding, limitations for most nonfarm uses ar If adequately drained, this soil is well suited soybeans, and other crops, but crops are su damage during periods of flooding. Wood support poor stands of hardwoods. Capabi IIIw-9; woodland suitability subclass 2w.

Urban Land

Urban land is so altered and obscured b works and structures that identification of is not feasible.

Ub—Urban land-Brookston complex. Thi level mapping unit is on smooth upland flat depressions and drainageways. Slopes are 0 cent. Areas range from 2 to 110 acres in size irregularly shaped.

This mapping unit is about 50 percent Ur and 30 percent very poorly drained Brooks Brookston soils are identifiable in lawns, parks, and other open areas. They have similar to the one described as representati series, but alteration is evident where small ways have been filled or leveled and other sm have been cut, built up, or smoothed.

Included with this unit in mapping are sm of well drained Miami soils and somewh drained Crosby soils. Also included are area and fill land.

Runoff is generally rapid on the Urban slow on the Brookston soils. Most areas ar by sewer systems and gutters, and some ar

by surface ditches. Some areas of Brookston soils in depressions and drainageways are ponded for brief periods by runoff from adjacent higher lying areas. Construction and engineering work should be based largely on the properties and qualities of the Brookston soils. Because of wetness, the Brookston soils have severe limitations for most nonfarm uses. If excess water is removed, they are well suited to lawns, vegetable and flower gardens, and water-tolerant shrubs and trees. Not assigned to a capability unit or woodland suitability subclass.

Uc—Urban land-Crosby complex. This nearly level mapping unit is on smooth upland flats. Slopes are 0 to 2 percent. Areas range from 10 to 1,000 acres and are irregularly shaped.

This mapping unit is about 50 percent Urban land and 30 percent somewhat poorly drained Crosby soils. Crosby soils are identifiable in lawns, gardens, parks, and other open areas. They have a profile similar to the one described as representative of the series, but alteration is evident where small, low lying ridges have been cut or smoothed.

Included with this unit in mapping are small areas of well drained Miami soils, very poorly drained Brookston soils, and Cut and fill land.

Runoff is generally rapid on the Urban land and slow on the Crosby soils. Most areas are drained by sewer systems and gutters, and some are drained by surface ditches. Construction and engineering work should be based largely on the properties and qualities of the Crosby soils. Erosion is a problem if disturbed areas are left bare for a considerable period. Bare areas are subject to gullying, sheet erosion, and water erosion, all of which remove much of the surface soil and subsoil. Because of wetness and slow permeability, the Crosby soils have severe limitations for most nonfarm uses. If excess water is removed, they are well suited to lawns, vegetable and flower gardens, and water-tolerant shrubs and trees. Not assigned to a capability unit or woodland suitability subclass.

UfA—Urban land-Fox complex, 0 to 3 percent slopes. This is a dominantly nearly level mapping unit on smooth terrace flats. In a few areas it is gently sloping. Areas range from 5 to 1,700 acres and are irregularly shaped.

This mapping unit is about 50 percent Urban land and 35 percent well drained Fox soils. Fox soils are identifiable in lawns, gardens, parks, and other open areas. They have a profile similar to the one described as representative of the series, but alteration is evident where small low knolls and ridges have been cut and the soil has been used as fill in lower lying areas.

Included with this unit in mapping are small areas of well drained Ockley and Martinsville soils, very poorly drained Westland soils, somewhat poorly drained Sleeth soils, and Cut and fill land.

Runoff is generally rapid on the Urban land and slow on the Fox soils. Most areas are drained by sewer systems and gutters, and some are drained by surface ditches. Construction and engineering work should be based largely on the properties and qualities of the Fox soils. Erosion is a problem if disturbed areas where the slopes are 2 or 3 percent are left bare for a considerable period. Bare areas on slopes are subject to gullying, sheet erosion, and water erosion, all of which remove much of the surface soil and subsoil. The Fox soils have slight limitations for most nonfarm uses. If adequately watered, they are well suited to lawns, vegetable and flower gardens, and drought-tolerant shrubs and trees. Not assigned to a capability unit or woodland suitability subclass.

UfC—Urban land-Fox complex, 6 to 12 percent slopes. This moderately sloping mapping unit is on the short slopes between broad, level terraces or outwash plains and bottom land and on the short slope breaks on terraces or outwash plains. Areas range from 10 to 65 acres in size and are long.

This mapping unit is about 50 percent Urban land and 35 percent well drained Fox soils. Fox soils are identifiable in lawns, gardens, parks, and other open areas. They have a profile similar to the one described as representative of the series, but the surface layer is thinner, depth to the underlying gravelly sand and sand is 24 to 32 inches, and in places alteration is evident.

Included with this unit in mapping are small areas of gently sloping soils and strongly sloping, well drained soils. Also included are areas of Cut and fill land.

Runoff is generally very rapid on the Urban land and medium on the Fox soils. Most areas are drained by sewer systems and gutters, and some are drained by surface ditches. Construction and engineering work should be based largely on the properties and qualities of the Fox soils. Erosion is a problem if disturbed areas are left bare for a considerable period. Bare areas are subject to gullying, sheet erosion, and water erosion, all of which remove much of the surface soil and subsoil. Because of slope, the Fox soils have moderate limitations for most nonfarm uses. If adequately watered, they are well suited to lawns, vegetable and flower gardens, and drought tolerant shrubs and trees. Not assigned to a capability unit or woodland suitability subclass.

Ug—Urban land-Genesee complex. This nearly level mapping unit is on bottom land. Areas range from 40 to 1,300 acres. Most are irregularly shaped, but some are long. Slopes are 0 to 2 percent. Large areas are protected by levees.

This mapping unit is about 40 percent Urban land and 40 percent well drained Genesee soils. Genesee soils are identifiable in lawns, gardens, parks, and other open areas. They have a profile similar to the one described as representative of the series, but alteration is evident in many areas where topsoil has been stripped.

Included with this unit in mapping are small areas of very poorly drained Sloan soils, somewhat poorly drained Shoals soils, and moderately well drained Eel soils. Also included are areas of fill.

Runoff is generally rapid on the Urban land and slow on the Genesee soils. Most areas are drained by sewer systems and gutters, and some are drained by surface ditches. Construction and engineering work should be based largely on the properties and qualities of the Genesee soils. Erosion is not a problem. Because

TABLE 11.—*Physical and chemical properties of soils*—Continued

Soil name and map symbol	Depth	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Risk of corrosion		Erosion factors		Wind erodibility group
						Uncoated steel	Concrete	K	T	
	In	*In/hr*	*In/in*	*pH*						
Miami clay loam part	0–8	0.6–2.0	0.18–0.20	5.6–7.3	Moderate	Moderate	Moderate	0.37	4	6
	8–24	0.6–2.0	0.15–0.20	5.6–6.0	Moderate	Moderate	Moderate	0.37		
	24–60	0.2–2.0	0.05–0.19	6.6–8.4	Low	Low	Low	0.37		
Ockley:										
OcA, OcB2	0–9	0.6–2.0	0.20–0.24	5.6–6.5	Low	Low	Moderate	0.37	4	5
	9–27	0.6–2.0	0.15–0.20	4.5–6.0	Moderate	Moderate	Moderate	0.37		
	27–56	0.6–2.0	0.12–0.14	5.6–6.5	Moderate	Moderate	Moderate	0.24		
	56–60	>20	0.02–0.04	7.4–8.4	Low	Low	Low	0.10		
Rensselaer:										
Re	0–15	0.2–0.6	0.20–0.24	6.6–7.3	Low	High	Low			5
	15–36	0.06–0.2	0.15–0.19	6.6–7.3	Moderate	High	Low			
	36–60	0.6–2.0	0.19–0.21	7.9–8.4	Low	High	Low			
Shoals:										
Sh	0–10	0.6–2.0	0.22–0.24	6.6–7.3	Low	High	Low			5
	10–35	0.6–2.0	0.20–0.22	6.6–7.3	Low	High	Low			
	35–60	0.6–2.0	0.19–0.21	6.6–7.3	Low	High	Low			
Sleeth:										
Sk	0–11	0.6–2.0	0.20–0.24	6.6–7.3	Low	High	Low			5
	11–20	0.6–2.0	0.15–0.19	5.6–6.5	Moderate	High	Low			
	20–54	0.6–2.0	0.14–0.16	6.6–8.4	Moderate	High	Low			
	54–60	>20	0.02–0.04	7.9–8.4	Low	Low	Low			
Sloan:										
Sn	0–8	0.6–2.0	0.20–0.24	6.1–7.8	Moderate	High	Low			
	8–45	0.2–2.0	0.15–0.19	6.1–7.8	Moderate	High	Low			
	45–60	0.2–2.0	0.16–0.20	6.6–7.8	Low	High	Low			
Urban land:										
[1] Ub:										
Brookston part	0–14	0.6–2.0	0.21–0.24	6.6–7.3	Moderate	High	Low			7
	14–54	0.6–2.0	0.15–0.19	6.6–7.3	Moderate	High	Low			
	54–60	0.2–0.6	0.05–0.19	7.4–8.4	Moderate	High	Low			
[1] Uc:										
Crosby part:	0–9	0.6–2.0	0.20–0.24	5.1–6.5	Low	High	Moderate	0.37	3–2	5
	9–27	0.06–0.2	0.15–0.20	5.1–7.3	Moderate	High	Moderate	0.37		
	27–60	0.06–0.6	0.05–0.19	7.9–8.4	Low	High	Low	0.37		
[1] UfA:										
Fox part	0–8	0.6–2.0	0.20–0.22	5.1–6.5	Low	Low	Moderate	0.32	3–2	6
	8–24	0.6–2.0	0.18–0.20	5.1–6.0	Moderate	Low	Moderate	0.32		
	24–38	0.6–2.0	0.12–0.14	6.1–7.8	Moderate	Low	Moderate	0.32		
	38–60	>6.0	0.02–0.04	7.9–8.4	Low	Low	Low	0.10		
[1] UfC:										
Fox part	0–8	0.6–2.0	0.20–0.22	5.1–6.5	Low	Low	Moderate	0.32	3–2	6
	8–24	0.6–2.0	0.18–0.20	5.1–6.0	Moderate	Low	Moderate	0.32		
	24–38	0.6–2.0	0.12–0.14	6.1–7.8	Moderate	Low	Moderate	0.32		
	38–60	>6.0	0.02–0.04	7.9–8.4	Low	Low	Low	0.10		
[1] Ug:										
Genesee part	0–6	0.6–2.0	0.20–0.24	6.1–7.8	Low	Low	Low			5
	6–34	0.6–2.0	0.17–0.22	6.1–8.4	Low	Low	Low			
	34–60	0.6–2.0	0.19–0.21	7.4–8.4	Low	Low	Low			
[1] UmB:										
Miami part	0–8	0.6–2.0	0.20–0.24	5.6–7.3	Low	Low	Moderate	0.37	5–4	5
	8–32	0.6–2.0	0.15–0.20	5.6–6.0	Moderate	Moderate	Moderate	0.37		
	32–60	0.2–2.0	0.05–0.19	6.6–8.4	Low	Low	Low	0.32		
[1] UmC:										
Miami part	0–8	0.6–2.0	0.20–0.24	5.6–7.3	Low	Low	Moderate	0.37	5–4	5
	8–32	0.6–2.0	0.15–0.20	5.6–6.0	Moderate	Moderate	Moderate	0.37		
	32–60	0.2–2.0	0.05–0.19	6.6–8.4	Low	Low	Low	0.32		
[1] Uw:										
Westland part	0–12	0.6–2.0	0.18–0.21	5.6–7.3	Moderate	High	Low			6
	12–42	0.06–0.2	0.15–0.19	5.6–7.3	Moderate	High	Low			
	42–60	>20	0.02–0.04	7.4–8.4	Low	High	Low			
Westland:										
We	0–12	0.6–2.0	0.18–0.21	5.6–7.3	Moderate	High	Low			6
	12–42	0.06–0.2	0.15–0.19	5.6–7.3	Moderate	High	Low			
	42–60	>20	0.02–0.04	7.4–8.4	Low	High	Low			
Whitaker:										
Wh	0–9	0.6–2.0	0.20–0.24	5.6–7.3	Low	Moderate	Moderate	0.37	5	5
	9–58	0.6–2.0	0.15–0.19	5.1–6.0	Moderate	High	Moderate	0.37		
	58–60	0.6–6.0	0.19–0.21	6.6–8.4	Low	High	Low	0.37		

[1] This mapping unit is made up of two or more dominant kinds of soil. See mapping unit description for the composition and behavior of the whole mapping unit.

(10)

TELEPHONE CALL REPORT

Non Responsive

Water Resources Data
Indiana
Water Year 1991

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT IN–91–1
Prepared in cooperation with the State of Indiana
and with other agencies

03353000 WHITE RIVER AT INDIANAPOLIS, IN

LOCATION.--Lat 39°45'05", long 86°10'30", in NW¼NW¼ sec.14, T.15 N., R.3 E., Marion County, Hydrologic Unit 05120201, on downstream side of second pier from right bank of Morris Street bridge in Indianapolis, 2.6 mi downstream from Fall Creek, 3.4 mi upstream from Eagle Creek, 4.0 mi upstream from Indianapolis Power and Light Company dam, and at mile 230.3.
DRAINAGE AREA.--1,635 mi^2.
PERIOD OF RECORD.--March 1904 to July 1906 and April 1930 to current year. Gage-height record published in reports of National Weather Service for site 1.1 mi upstream Feb. 8, 1911, to Mar. 25, 1913, and at site 2.3 mi upstream since Oct. 16, 1913. Prior to October 1948, published as West Fork White River at Indianapolis.
REVISED RECORDS.--WSP 1335: 1932-33, 1937, 1939-41. WSP 1505: 1938. WSP 2109: Drainage area.
GAGE.--Water-stage recorder. Datum of gage is 662.26 ft above National Geodetic Vertical Datum of 1929. March 1904 to July 1906, nonrecording gage at railroad bridge 0.8 mi upstream at datum approximately 2.9 ft higher. April 1930 to July 20, 1931, nonrecording gage at Indianapolis sanitation plant, 2.5 mi downstream at datum 660.00 ft lower. July 21, 1931 to Mar. 2, 1932, nonrecording gage and March 3, 1932, to September 30, 1960, water-stage recorder at present site at datum 660.00 ft lower.
REMARKS.--Records good except for estimated daily discharges, which are poor. Natural flow affected by regulation of Morse Reservoir and Geist Reservoir, and by diversion of municipal water supply by the Indianapolis Water Company. Stage-discharge relation affected at times by large releases from Eagle Creek and by variable leakage at Indianapolis Power and Light Company dam.
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 26, 1913, reached a stage of 30.0 ft, from floodmarks determined by Indianapolis Water Company, discharge, 70,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	500	739	3040	35400	1370	1450	2300	1420	4670	306	e100	99
2	478	711	2300	24100	1300	1550	2070	1290	5700	290	e98.0	85
3	509	681	4250	9130	1430	1520	1840	1200	4490	272	e130	83
4	2260	663	6990	4940	1690	1450	1810	1310	2830	246	e220	179
5	2740	943	6790	3860	2680	1340	1990	1290	1970	245	e310	145
6	2890	1040	4180	3280	4820	1240	1990	1410	1460	243	e465	132
7	2120	1250	2970	2800	6740	1250	1880	1260	1180	238	209	106
8	1760	1110	2450	2530	6600	1150	1940	1160	978	234	186	81
9	1710	945	2020	2230	4700	1120	2350	1080	840	315	192	71
10	3900	859	1790	2020	3410	1030	2110	1070	725	725	149	74
11	7020	815	1640	2260	2800	991	1820	1040	656	444	143	71
12	6800	766	1520	3220	2370	1900	1590	1040	642	463	116	143
13	4260	734	1370	3840	2120	8290	2440	1000	597	359	83	405
14	2910	693	1310	3000	2090	8480	3160	1060	523	e290	86	192
15	2310	665	2230	2680	2030	7320	5910	1070	468	e230	100	134
16	1890	670	3960	3430	1750	6530	6320	1530	799	e200	76	131
17	1610	670	4680	5110	1540	6610	4560	1550	641	e180	138	109
18	1680	651	4810	5100	2020	8240	3120	2890	640	e170	163	83
19	2010	621	6900	3590	2810	8700	4310	3840	481	e160	200	70
20	2230	609	7550	2950	4280	7870	5560	3070	383	e152	190	58
21	1840	614	6310	2810	4040	4990	5400	1990	340	e145	184	56
22	1660	857	7370	2590	3100	6200	3870	1740	314	e150	219	96
23	1510	819	8430	2260	2530	8120	2950	1850	418	e158	143	244
24	1360	845	6070	1980	2100	8510	2480	2000	1110	e150	113	152
25	1210	857	3920	1710	1870	6680	2180	1710	1010	e141	89	126
26	1080	784	e2900	1590	1690	5270	1930	1590	824	e137	76	127
27	969	1480	e2500	1510	1550	5730	1760	1410	525	e130	68	104
28	882	3850	e2350	1450	1450	5970	1660	1200	409	e123	89	73
29	844	5150	4900	1390	---	4550	1630	1100	334	e117	142	64
30	796	4700	26300	1530	---	3240	1470	1220	308	e110	127	81
31	760	---	36800	1390	---	2620	---	1520	---	e105	132	---
TOTAL	64498	35791	180600	145680	76880	139911	84400	47910	36265	7228	4736.0	3574
MEAN	2081	1193	5826	4699	2746	4513	2813	1545	1209	233	153	119
MAX	7020	5150	36800	35400	6740	8700	6320	3840	5700	725	465	405
MIN	478	609	1310	1390	1300	991	1470	1000	308	105	68	56
CFSM	1.27	.73	3.56	2.87	1.68	2.76	1.72	.95	.74	.14	.09	.07
IN.	1.47	.81	4.11	3.31	1.75	3.18	1.92	1.09	.83	.16	.11	.08

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1991, BY WATER YEAR (WY)

MEAN	424	775	1405	1917	2209	2769	2704	1857	1368	814	534	410
MAX	2081	4518	5826	12120	6452	6610	7777	8594	7910	3149	3399	5063
(WY)	1991	1973	1991	1950	1950	1963	1964	1943	1958	1957	1979	1989
MIN	70.1	110	77.3	78.4	178	207	274	113	126	90.3	42.5	31.5
(WY)	1941	1935	1964	1977	1964	1941	1941	1941	1988	1936	1941	1941

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1931 - 1991	
ANNUAL TOTAL	976776		827473.0			
ANNUAL MEAN	2676		2267		1428	
HIGHEST ANNUAL MEAN					2698	1950
LOWEST ANNUAL MEAN					233	1941
HIGHEST DAILY MEAN	36800	Dec 31	36800	Dec 31	36800	Dec 31 1990
LOWEST DAILY MEAN	386	Aug 12	56	Sep 21	8.0	Sep 29 1941
ANNUAL SEVEN-DAY MINIMUM	462	Jul 4	86	Sep 16	12	Sep 24 1941
INSTANTANEOUS PEAK FLOW			38000	Dec 31	38000	Dec 31 1990
INSTANTANEOUS PEAK STAGE			20.51	Dec 31	21.57	Jan 16 1937
ANNUAL RUNOFF (CFSM)	1.64		1.39		.87	
ANNUAL RUNOFF (INCHES)	22.22		18.83		11.86	
10 PERCENT EXCEEDS	6440		5320		3300	
50 PERCENT EXCEEDS	1640		1410		635	
90 PERCENT EXCEEDS	674		127		144	

(13)

DNR MEMORANDUM

State of Indiana • Department of Natural Resources • Indianapolis

TO: Mark Jaworski
Site Investigation Section, Ofc of Environmental Response
IDEM
Room 837 Chesapeake Building
105 S. Meridian Street

FROM: Cloyce L. Hedge CLH
Coordinator, Indiana Natural Heritage Data Center

DATE: 1-19-93

SUBJECT: Sensitive Species, etc.- Arvin Industries

I am responding to your request for information on the endangered, threatened, or rare (ETR) species and high quality natural communities and natural areas documented from the area indicated in the subject. The Indiana Natural Heritage Data Center has been checked. If a Land and Water Conservation Fund (LWCF) Site or a Natural and Scenic River is involved, you should contact the Division of Outdoor Recreation, (317)232-4070.

- [X] see attached sheet
- [ ] no ETR species or natural areas documented
- [X] LWCF Site
- [ ] Designated or candidate Natural & Scenic River

The information I am providing does not preclude the requirement for further consultation with the U.S. Fish and Wildlife Service as required under Section 7 of the Endangered Species Act of 1973. Contact:

U.S. Fish and Wildlife Service
718 North Walnut
Bloomington, Indiana 47401
(812)334-4261

At some point, you may need to contact the Department of Natural Resources' Environmental Review Coordinator so that other divisions within the department have the opportunity to review your proposal. For more information, please contact:

Patrick R. Ralston, Director
Department of Natural Resources
attn: Steve Jose
Environmental Review Coordinator
402 W. Washington Street, Room W271
Indianapolis, IN 46204
(317)232-4070

The Indiana Natural Heritage Data Center relies on the observations of many individuals for our data. In most cases, the information is not the result of comprehensive field surveys conducted at particular sites. Therefore, our statement that there are no documented significant natural features at a site should not be interpreted to mean that the site does not support special plants or animals.

Due to the dynamic nature and sensitivity of the data, this information should not be used for any project other than that for which it was intended. It may be necessary for you to request updated material.

Thank you for contacting the Indiana Natural Heritage Data Center. You may reach me at (317)232-4052 if you have any questions or need additional information.

SENSITIVE SPECIES, ETC.

Arvin Industries

Species/Feature	*Status	Location	
Bartramia longicauda	SE Bird	(1)	✓
Clonophis kirtlandii	FC, ST Snake	(2)	✓
Floodplain Forest	Natural Community	(3)	✓
2WCF site	—	"	
Ardea herodias	Unlisted Bird	(4)	
Epioblasma ~~torulosa~~ torulosa rangiana	FC, SE Mussel	(5)	✓
Lampsilis ovata	Unlisted "	"	
Ligumia recta	" "	"	
Obovaria subrotunda	" "	"	
Pleurobema clava	FC, SE "	"	✓
Quadrula cylindrica cylindrica	SE "	"	✓

*Status: SE - State Endangered
ST - State Threatened
SR - State Rare
SSC - State Special Concern
FE - Federal Endangered
FT - Federal Threatened
FC - Federal Candidate

(15)

ON-SITE VISIT
~~TELEPHONE CALL~~ REPORT

Date 1/15/93 Time 10:00 AM

From: _____ To: _____

_____ _____

Subject Discussed _____

Summary

On 1-15-93, I met with Loyd Paxton, the present warehouse manager for TSC. He said that the former Irwin plant is now being leased by the Tractor Supply Company. The north half of the building is leased by the Tractor Supply Company and the south ½ is leased by the State of Indiana (Forms Department). TSC is a farm equipment and supply company. The building is being used as a warehouse for TSC. The only substance used by TSC is a degreaser to keep the floors free of oil.

Action Required

Details

File in County _____

State Form 4177
SBH61-075
11/78

ARVIN

ARVIN INDUSTRIES, INC., One Noblitt Plaza, Box 3000, Columbus, IN 47202-3000 (812) 379-3000

Legal Department

21 December 1992

Mr. Mark Jaworski
Site Investigation Section
Indiana Department of
Environmental Management
105 S. Meridian St.
Indianapolis IN 46225

Re: 4430 Airport Expressway

Dear Mr. Jaworski:

Pursuant to your request, please find enclosed a copy of the report of the Phase II investigation which ATEC conducted on Arvin's behalf at the above-captioned location in September of 1989.

As is reflected in the report, I have additionally confirmed both that the contents of the two UST's at the northwest corner of the building consisted almost exclusively of mineral spirits (with perhaps traces of tolulene and xylene) and that trichlorethane was not used in the operation of the facility.

As regards the one "hot spot" for TCE reflected by the MW-2 sample, I note that the contour map (Fig. 4) shows that the groundwater flow is West-to-East, making MW-2 upgradient from MW-3. This is at least indicative that the source of the trichlorethane in the groundwater was off-site, an inference further supported by the fact that I am advised that this contaminant was not employed at the facility.

I trust this is responsive to your inquiry.

Sincerely,

Page E. Gifford
Counsel

PEG/ego

encl.

(17)

determine if flood insurance is available in this community, ntact your insurance agent, or call the National Flood Insurance ogram, at (800) 638-6620.

APPROXIMATE SCALE

1000 0 1000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

CITY OF
INDIANAPOLIS,
INDIANA
MARION COUNTY
(INCLUDES CITY OF BEECH GROVE, CITY OF LAWRENCE, CITY OF SOUTHPORT AND TOWN OF SPEEDWAY)

PANEL 70 OF 100

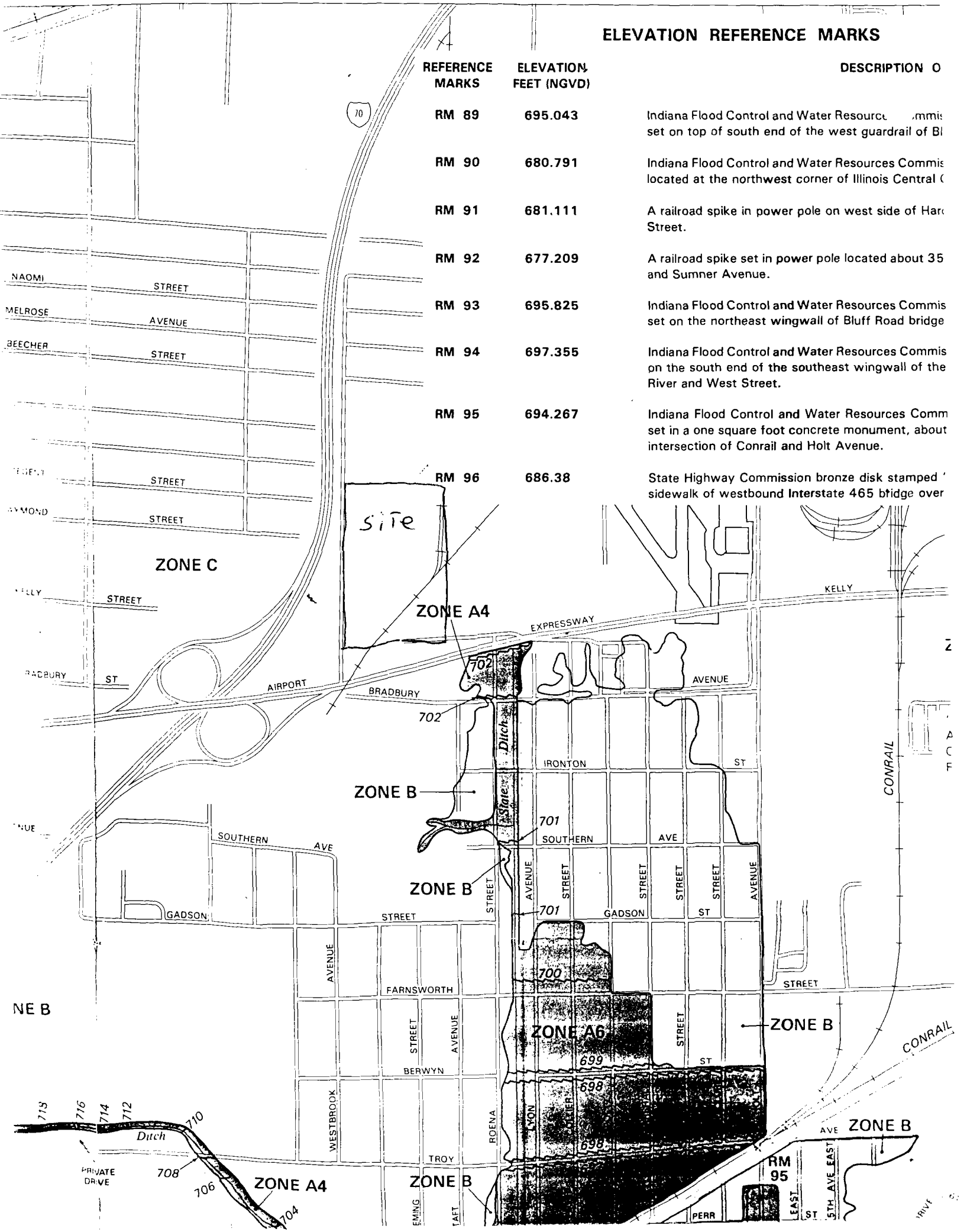
COMMUNITY-PANEL NUMBER
180159 0070 D

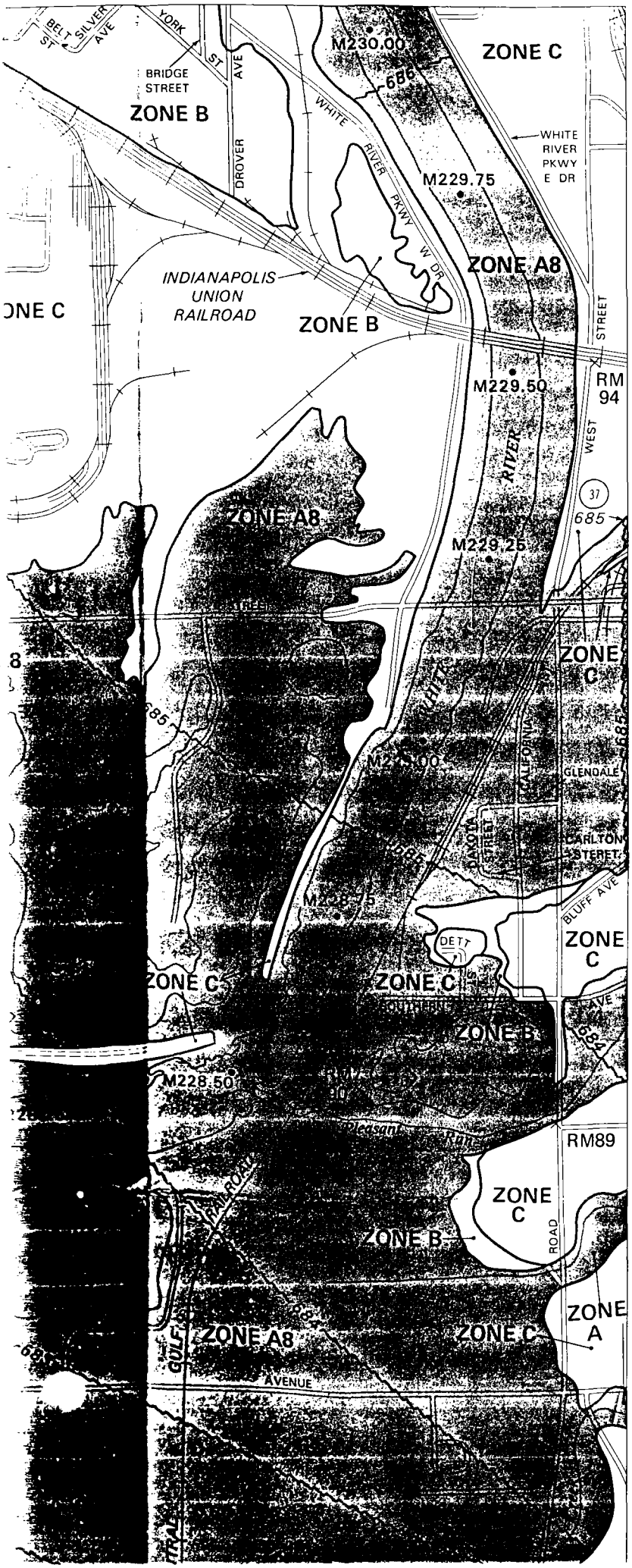
MAP REVISED:
JUNE 3, 1988

Federal Emergency Management Agency

ELEVATION REFERENCE MARKS

REFERENCE MARKS	ELEVATION, FEET (NGVD)	DESCRIPTION O
RM 89	695.043	Indiana Flood Control and Water Resourc ,mmis set on top of south end of the west guardrail of Bl
RM 90	680.791	Indiana Flood Control and Water Resources Commis located at the northwest corner of Illinois Central (
RM 91	681.111	A railroad spike in power pole on west side of Har Street.
RM 92	677.209	A railroad spike set in power pole located about 35 and Sumner Avenue.
RM 93	695.825	Indiana Flood Control and Water Resources Commis set on the northeast wingwall of Bluff Road bridge
RM 94	697.355	Indiana Flood Control and Water Resources Commis on the south end of the southeast wingwall of the River and West Street.
RM 95	694.267	Indiana Flood Control and Water Resources Comm set in a one square foot concrete monument, about intersection of Conrail and Holt Avenue.
RM 96	686.38	State Highway Commission bronze disk stamped ' sidewalk of westbound Interstate 465 bridge over





KEY TO MAP

500-Year Flood Boundary	
100-Year Flood Boundary	ZONE B
Zone Designations*	
100-Year Flood Boundary	ZONE B
500-Year Flood Boundary	
Base Flood Elevation Line With Elevation In Feet**	513
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 987)
Elevation Reference Mark	RM7×
Zone D Boundary	
River Mile	•M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas.

Certain areas not in the Special Flood Hazard Areas may be protected by flood control structures.

Corporate limits shown are current as of the date of this map. The user should contact appropriate community officials to determine if corporate limits have changed subsequent to the issuance of this map.

For adjoining panels, see separately printed Map Index.

INITIAL IDENTIFICATION:

MAY 17, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS:

SEPTEMBER 24, 1976
SEPTEMBER 15, 1978

C

OMB Approval Number: 2050-0095
Approved for Use Through: 4/95

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: IN	CERCLIS Number: IND062812870
	CERCLIS Discovery Date: 10-23-89	

1. General Site Information

Name:		Street Address:			
ARVIN INDUSTRIES		4430 AIRPORT EXPRESSWAY			
City:	State:	Zip Code:	County:	Co. Code:	Cong. Dist:
INDIANAPOLIS	IN	47201	MARION	97	10
Latitude: Longitude:	Approx. Area of Site:	Status of Site:			
39° 44' 6.0" 86° 14' 13.4"	14 acres	Active			

2. Owner/Operator Information

Owner:			Operator:		
C.B.COMMERCIAL			ARVIN INDUSTRIES		
Street Address:			Street Address:		
115 W WASHINGTON ST. E11705			ONE NOBLITT PLAZA,BOX 3000		
City:			City:		
INDIANAPOLIS			COLUMBUS		
State:	Zip Code:	Telephone:	State:	Zip Code:	Telephone:
IN	46204	317-269-1000	IN	47202-3000	812-379-3000
Type of Ownership:			How Initially Identified:		
Private			Other FACILITY INFORMED IDEM		

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: IN	CERCLIS Number: IND062812870
	CERCLIS Discovery Date: 10-23-89	

3. Site Evaluator Information

Name of Evaluator:	Agency/Organization:	Date Prepared:
MARK JAWORSKI	IDEM	3-15-93

Street Address:	City:	State:
105 SOUTH MERIDIAN	INDIANAPOLIS	IN

Name of EPA or State Agency Contact:	Telephone:
HARRY ATKINSON	317-232-8928

Street Address:	City:	State:
105 SOUTH MERIDIAN	INDIANAPOLIS	IN

4. Site Disposition (for EPA use only)

Emergency Response/Removal Assessment Recommendation: No	CERCLIS Recommendation: SEA Priority SI	Signature: Mark Jaworski
Date:	Date: 3-15-93	Name: MARK JAWORSKI
		Position: ENVIRONMENTAL SCIENTIST

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: IN	CERCLIS Number: IND062812870
	CERCLIS Discovery Date: 10-23-89	

5. General Site Characteristics

Predominant Land Uses Within 1 Mile of Site:	Site Setting:	Years of Operation:
Industrial	Urban	Beginning Year: 1974 Ending Year: 1988

Type of Site Operations:	Waste Generated:
Manufacturing Paints, Varnishes Fabricated Structural Metal Products	Onsite
	Waste Deposition Authorized By: Former Owner
	Waste Accessible to the Public: No
	Distance to Nearest Dwelling, School, or Workplace: 3000 Feet

6. Waste Characteristics Information

Source Type	Quantity	Tier
Non-drum containers	1.85e+04 gals	V

Tier Legend
C = Constituent W = Wastestream
V = Volume A = Area

General Types of Waste:
Solvents
Paints/Pigments

Physical State of Waste as Deposited
Liquid

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: IN	CERCLIS Number: IND062812870
	CERCLIS Discovery Date: 10-23-89	

7. Ground Water Pathway

Is Ground Water Used for Drinking Water Within 4 Miles:
Yes

Type of Ground Water Wells Within 4 Miles:
Municipal
Private

Depth to Shallowest Aquifer:
12 Feet

Karst Terrain/Aquifer Present:
No

Is There a Suspected Release to Ground Water:
Yes

Have Primary Target Drinking Water Wells Been Identified: Yes

Primary Target Population: 5

Nearest Designated Wellhead Protection Area:
None within 4 Miles

List Secondary Target Population Served by Ground Water Withdrawn From:

0 - 1/4 Mile	0
>1/4 - 1/2 Mile	180
>1/2 - 1 Mile	665
>1 - 2 Miles	726
>2 - 3 Miles	0
>3 - 4 Miles	13092
Total	14663

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: IN	CERCLIS Number: IND062812870
	CERCLIS Discovery Date: 10-23-89	

8. Surface Water Pathway — Part 1 of 4

Type of Surface Water Draining Site and 15 Miles Downstream:	Shortest Overland Distance From Any Source to Surface Water:
Stream River	0 Feet 0.0 Miles
Is there a Suspected Release to Surface Water: No	Site is Located in: Annual - 10 yr floodplain

8. Surface Water Pathway — Part 2 of 4

Drinking Water Intakes Along the Surface Water Migration Path: Yes

Have Primary Target Drinking Water Intakes Been Identified: No

Secondary Target Drinking Water Intakes:

Name	Water Body/Flow(cfs)	Population Served
NONE	minimal stream/ <10	0
	Total Within 15 Miles:	0

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: IN	CERCLIS Number: IND062812870
	CERCLIS Discovery Date: 10-23-89	

8. Surface Water Pathway Part 3 of 4

Fisheries Located Along the Surface Water Migration Path: Yes

Have Primary Target Fisheries Been Identified: No

Secondary Target Fisheries:

Fishery Name	Water Body Type/Flow(cfs)
STATE DITCH	small-moderate stream/ 10-100
WHITE RIVER	moderate-large stream/ >100-1000

8. Surface Water Pathway Part 4 of 4

Wetlands Located Along the Surface Water Migration Path? (y/n) No

Have Primary Target Wetlands Been Identified? (y/n) No

Secondary Target Wetlands:
None

Other Sensitive Environments Along the Surface Water Migration Path: Yes

Have Primary Target Sensitive Environments Been Identified: No

Secondary Target Sensitive Environments:

Water Body/Flow(cfs)	Sensitive Environment Type
small-moderate stream/ 10-100	Habitat used by Fed. des.species
minimal stream/ <10	State designated Natural Area
small-moderate stream/ 10-100	Habitat used by Fed. des.species
small-moderate stream/ 10-100	Habitat used by Fed. des.species

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: IN	CERCLIS Number: IND062812870
	CERCLIS Discovery Date: 10-23-89	

9. Soil Exposure Pathway

Are People Occupying Residences or Attending School or Daycare on or Within 200 Feet of Areas of Known or Suspected Contamination: No	Number of Workers Onsite: 1 - 100

Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: Yes

Terrestrial Sensitive Environments:

Habitat used by State designated endangered/threatened species

10. Air Pathway

Total Population on or Within:	
Onsite	35
0 - 1/4 Mile	74
>1/4 - 1/2 Mile	343
>1/2 - 1 Mile	858
>1 - 2 Miles	39141
>2 - 3 Miles	39141
>3 - 4 Miles	78283
Total	157875

Is There a Suspected Release to Air: No

Wetlands Located Within 4 Miles of the Site: No

Other Sensitive Environments Located Within 4 Miles of the Site: Yes

Sensitive Environments Within 1/2 Mile of the Site:

Distance	Sensitive Environment Type/Wetlands Area(acres)
0 - 1/4	Habitat for State designated end/thr species

D

PHOTOGRAPHY LOG SHEET

Page _____

SITE ARVIN INDUSTRIES

DATE 1-15-93

TIME 9:05 AM

DIRECTION _____

WEATHER MID 40'S, OVERCAST

PHOTOGRAPHED BY:

MARK JAWORSKI

SAMPLE ID # (IF APPLICABLE)

NA

DESCRIPTION: PICTURE IS FACING EAST. SHOWING THE NORTHERN PERIMETER OF THE PLANT BUILDING AND THE NORTHERN PARKING LOT

SITE ARVIN INDUSTRIES

DATE 1-15-93

TIME 9:10 AM

DIRECTION _____

WEATHER MID 40'S, OVERCAST

PHOTOGRAPHED BY:

MARK JAWORSKI

SAMPLE ID # (IF APPLICABLE)

#7

DESCRIPTION: PICTURE IS FACING NORTHWEST SHOWING THE NORTHWEST CORNER OF ARVIN INDUSTRIES AND THE SOUTHWEST CORNER OF "GROCERS SUPPLY" PROPERTY

PHOTOGRAPHY LOG SHEET

Page _____

SITE Arvin Industries

DATE 1-15-93

TIME 10:10 AM

DIRECTION _____

WEATHER MID 40's, overcast

PHOTOGRAPHED BY:

MARK JAWORSKI

SAMPLE ID # (IF APPLICABLE)

NA

DESCRIPTION: Picture facing North showing monitoring well #3 which allegedly was run over

SITE Arvin Industries

DATE 1-15-93

TIME 10:15 AM

DIRECTION _____

WEATHER MID 40's, overcast

PHOTOGRAPHED BY:

MARK JAWORSKI

SAMPLE ID # (IF APPLICABLE)

NA

DESCRIPTION: Picture facing west showing the northern perimeter of the PLANT building and the northern parking lot.

PHOTOGRAPHY LOG SHEET Page _____

SITE Arvin Industries

DATE 1-15-93

TIME 10:00 AM

DIRECTION _____

WEATHER Mid 40's Overcast

PHOTOGRAPHED BY:

Mark Jaworski

SAMPLE ID # (IF APPLICABLE)

NA

DESCRIPTION: Picture facing North showing the eastern perimeter of the PLANT building and the eastern parking lot area

SITE Arvin Industries

DATE 1-15-93

TIME 9:50 AM

DIRECTION _____

WEATHER Mid 40's, overcast

PHOTOGRAPHED BY:

Mark Jaworski

SAMPLE ID # (IF APPLICABLE)

NA

DESCRIPTION: Picture is facing west showing the southern perimeter of the former PLANT building

PHOTOGRAPHY LOG SHEET

Page _____

SITE Arvin Industries

DATE 1-15-93

TIME 9:30 AM

DIRECTION _____

WEATHER Mid 40's, overcast

PHOTOGRAPHED BY:

Mark Jaworski

SAMPLE ID # (IF APPLICABLE)

NA

DESCRIPTION: Picture facing North Showing a portion of the southern plant building that is now occupied by the State of Indiana Personnel

SITE Arvin Industries

DATE 1-15-93

TIME 9:20 AM

DIRECTION _____

WEATHER Mid 40's, overcast

PHOTOGRAPHED BY:

Mark Jaworski

SAMPLE ID # (IF APPLICABLE)

A

DESCRIPTION: Picture is facing Southwest Showing The location of Monitoring well #1 by the billboard

PHOTOGRAPHY LOG SHEET Page _____

SITE Arvin Industries

DATE 1-15-93

TIME 9:15 AM

DIRECTION _____

WEATHER MID 40's, OVERCAST

PHOTOGRAPHED BY:

MARK JAWORSKI

SAMPLE ID # (IF APPLICABLE)

NA

DESCRIPTION: Picture is facing South showing the western perimeter of the former PLANT building

SITE Arvin Industries

DATE 1-15-93

TIME 9:00 AM

DIRECTION _____

WEATHER MID 40's; OVERCAST

PHOTOGRAPHED BY:

MARK JAWORSKI

SAMPLE ID # (IF APPLICABLE)

NA

DESCRIPTION: Picture is facing WEST showing the LOCATION where the Underground Storage TANKS were removed

E

SDMS US EPA Region V

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OVERSIZE MAP – 4 MILE RADIUS MAP

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SDMS US EPA Region V

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OVERSIZE MAP – 15 mile surface water path map

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OVERSIZE MAP – AERIAL BLUEPRINT MAP

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Specify Type of Document(s) / Comments:

SDMS US EPA Region V

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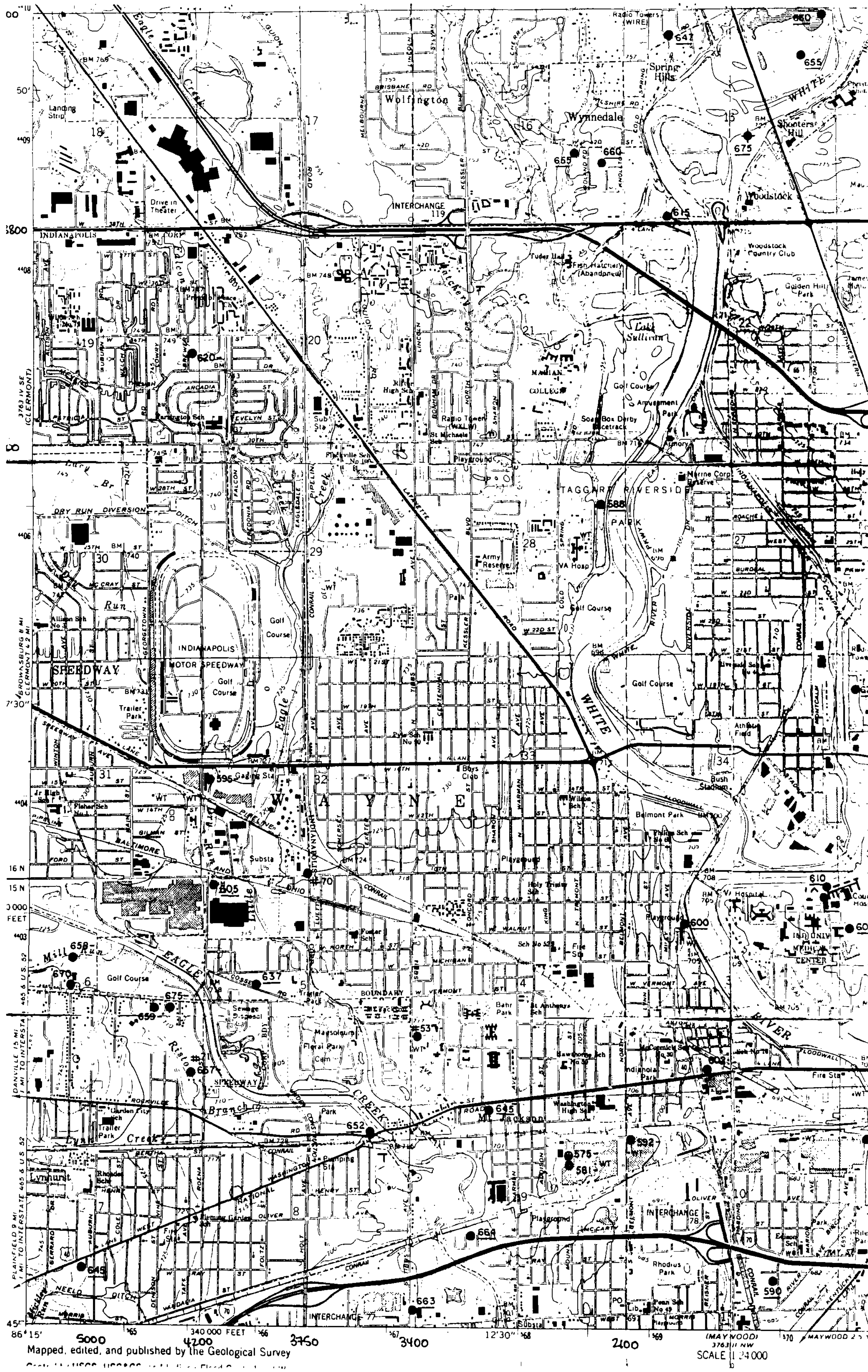
OVERSIZE MAP – FEMA FLOOD INSURANCE RATE MAP

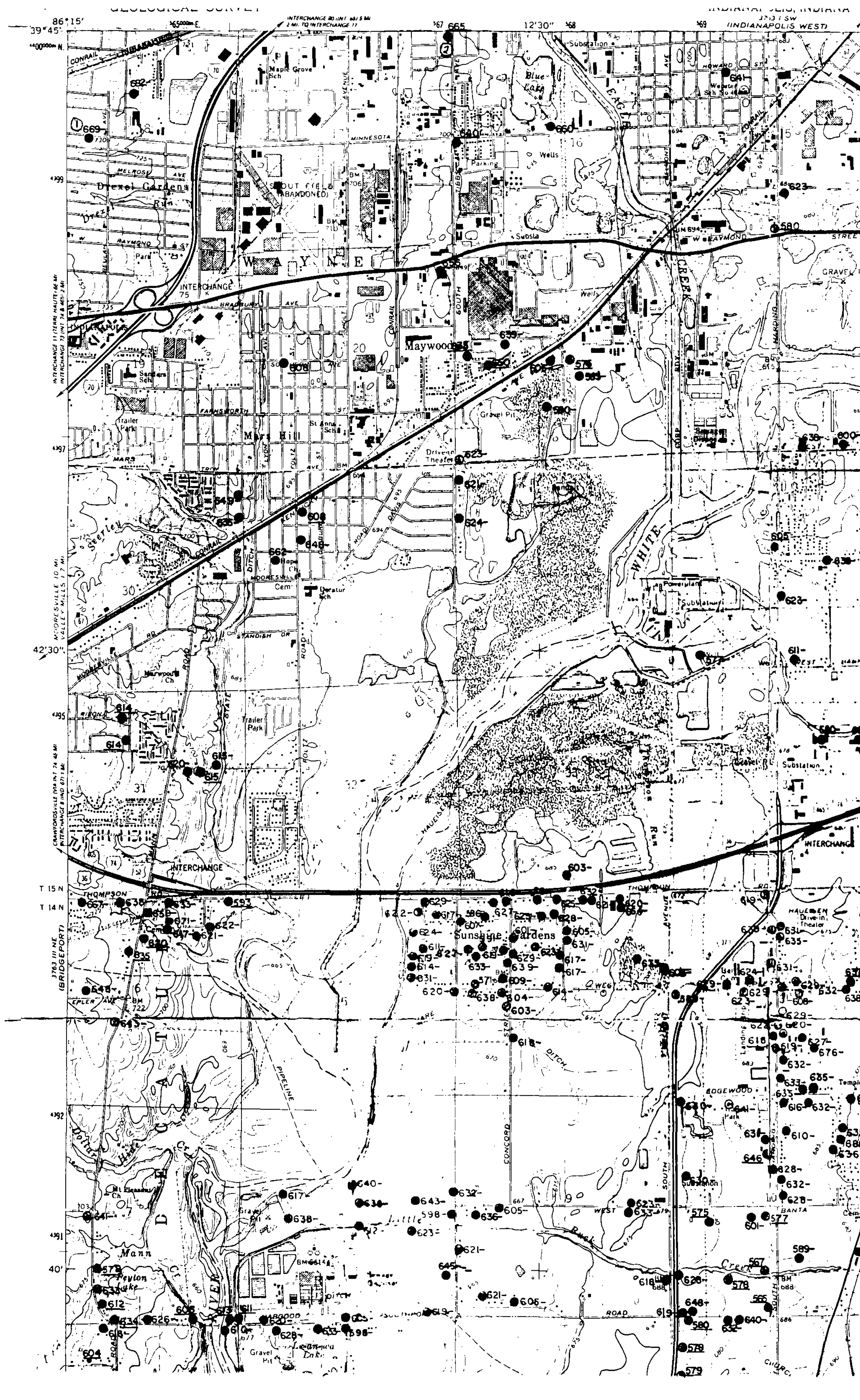
☐ Document is available at the EPA Region 5 Records Center.

Specify Type of Document(s) / Comments:

F



Mapped, edited, and published by the Geological Survey



INDIANAPOLIS WEST
86°15'
39°45'
12'30"
42'30"
40'
INTERCHANGE
WAYNE
Drexel Gardens
Maywood
Mars Hill
Sunshine Gardens
Maple Grove Sch
Blue Lake
Substation
Webster Sch
MINNESOTA
MELROSE AVE
RAYMOND ST
BRADBURY AVE
FARNSWORTH
MARS
MOORESVILLE RD
STANDISH DR
Trailer Park
Marwood Ch
Sanders Sch
St Anna Sch
Decatur Sch
Drive-in Theater
Gravel Pit
Powerplant
Sewage Disposal
WHITE
EAGLE CREEK
CONRAIL
Seerley
THOMPSON
T 15 N
T 14 N
EPLER AVE
EDGEWOOD
WEST
ROAD
PIPELINE
CONCORD
SOUTH
DITCH
Little
Mann
Peyton Lake
Lake
Gravel Pit
Substation
HARDING
BANTA
Templet
Hauesen Drive-in Theater
3763 III NE (BRIDGEPORT)
MOORESVILLE 10 MI
VALLEY MILLS 1.7 MI
CRAWFORDSVILLE

DIVISION OF WATER
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA
STATE OFFICE BUILDING
INDIANAPOLIS, INDIANA 46209

(1)

WATER WELL RECORD

Non Responsive

Non Responsive

DIVISION OF WATER
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA
STATE OFFICE BUILDING
INDIANAPOLIS, INDIANA 46209
MElrose 3–6757

Lonsto!

WATER WELL RECORD

Non Responsive

Non Responsive

S 45

DIVISION OF WATER RESOURCES
INDIANA DEPARTMENT OF CONSERVATION
311 WEST WASHINGTON STREET
INDIANAPOLIS, INDIANA

WATER WELL RECORD

Non Responsive

Non Responsive

WATER WELL RECORD

State Form 35680R2

Mail completed record within 30 days to:
DIVISION OF WATER
INDIANA DEPARTMENT OF NATURAL RESOURCES
2475 DIRECTORS ROW

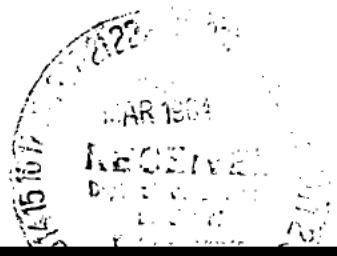
Non Responsive

Non Responsive

S 9

DIVISION OF WATER RESOURCES
INDIANA DEPARTMENT OF CONSERVATION
311 WEST WASHINGTON STREET
INDIANAPOLIS, INDIANA

(2)



WATER WELL RECORD

Non Responsive

Non Responsive